

CALENDAR
OF THE
UNIVERSITY OF MICHIGAN
FOR
1892-93.

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CALENDAR

OF THE

UNIVERSITY OF MICHIGAN

FOR

1892-93.



ANN ARBOR, MICH.:
PUBLISHED BY THE UNIVERSITY.

1893.

1893:

COURIER, PRINTERS AND BINDERS,
ANN ARBOR, MICH.

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ANNOUNCEMENTS FOR 1893-94.

1893.

- Jan. 10. University Exercises resumed after Holiday Vacation.
 Feb. 17. (Evening.) FIRST SEMESTER CLOSES.
 Feb. 20. SECOND SEMESTER BEGINS.
 April 14. (Evening.) Recess begins, ending April 24 (evening).
 June 16, 17. *Examination for Admission to the School of Pharmacy.*
 June 24, 26. *Examination for Admission to the Department of Literature, Science, and the Arts.*
 June 25. *Baccalaureate Address.*
 June 27. *Class Day.*
 June 28. *Alumni Day.*
 June 28. *Examination for Admission to the Homœopathic Medical College.*
 June 29. COMMENCEMENT IN ALL DEPARTMENTS OF THE UNIVERSITY. The Commencement Oration is to be delivered by CHARLES DUDLEY WARNER, L. H. D.
 Summer Vacation from June 30 to September 30.
 Sept. 25-29. *Examination for Admission to the Department of Literature, Science, and the Arts.*
 Sept. 29. *Examination for Admission to the Department of Medicine and Surgery.*
 Sept. 29-30. *Examination for Admission to the Department of Law, to the School of Pharmacy, to the Homœopathic Medical College, and to the College of Dental Surgery.*
 Oct. 1. FIRST SEMESTER BEGINS IN ALL DEPARTMENTS OF THE UNIVERSITY.
 Nov. — Thanksgiving Recess of three days, beginning Tuesday evening, in all Departments of the University.
 Dec. 22. (Evening.) Holiday Vacation begins in all Departments.

1894.

- Jan. 9. Exercises Resumed.
 Feb. 16. (Evening.) FIRST SEMESTER CLOSES.
 Feb. 19. SECOND SEMESTER BEGINS.
 April 13. (Evening.) Recess begins, ending April 23 (evening).
 June 28. COMMENCEMENT IN ALL DEPARTMENTS OF THE UNIVERSITY.

1893.

JANUARY.							FEBRUARY.							MARCH.							APRIL.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	.....	.....	.....	1	2	3	4	.....	.....	1	2	3	4	.....	.....	.....	.....	.....	.....	.....	1
8	9	10	11	12	13	14	5	6	7	8	9	10	11	5	6	7	8	9	10	11	2	3	4	5	6	7	8
15	16	17	18	19	20	21	12	13	14	15	16	17	18	12	13	14	15	16	17	18	9	10	11	12	13	14	15
22	23	24	25	26	27	28	19	20	21	22	23	24	25	19	20	21	22	23	24	25	16	17	18	19	20	21	22
29	30	31	.....	.....	.....	.....	26	27	28	.....	.....	.....	.....	26	27	28	29	30	31	.....	23	24	25	26	27	28	29
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30	.....	.....	.....	.....	.....	.....
MAY.							JUNE.							JULY.							AUGUST.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
.....	1	2	3	4	5	6	.....	.....	.....	.....	1	2	3	.....	.....	.....	.....	.....	1	.....	.....	1	2	3	4	5	.....
7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12
14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19
21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26
28	29	30	31	.....	.....	.....	25	26	27	28	29	30	.....	23	24	25	26	27	28	29	27	28	29	30	31	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
SEPTEMBER.							OCTOBER.							NOVEMBER.							DECEMBER.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
.....	.....	.....	.....	.....	1	2	1	2	3	4	5	6	7	.....	.....	.....	1	2	3	4	.....	.....	.....	.....	.....	1	2
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
24	25	26	27	28	29	30	29	30	31	.....	.....	.....	.....	26	27	28	29	30	.....	.....	24	25	26	27	28	29	30
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	31	.....	.....	.....	.....	.....	.....

1894.

[illegible]

BOARD OF REGENTS.

JAMES B. ANGELL, LL.D.,
PRESIDENT.

		TERM EXPIRES.
HON. HERMANN KIEFER,	<i>Detroit,</i>	Dec. 31, 1893.
HON. CHARLES R. WHITMAN,	<i>Ann Arbor,</i>	" 1893.
HON. ROGER W. BUTTERFIELD,	<i>Grand Rapids,</i>	" 1895.
HON. CHARLES HEBARD,	<i>Pequaming,</i>	" 1895.
HON. LEVI L. BARBOUR,*	<i>Detroit,</i>	" 1897.
HON. WILLIAM J. COCKER,	<i>Adrian,</i>	" 1897.
HON. PETER N. COOK,	<i>Corunna,</i>	" 1899.
HON. HENRY HOWARD,	<i>Port Huron,</i>	" 1899.

JAMES H. WADE,
SECRETARY AND STEWARD.

HARRISON SOULE,
TREASURER.

HON. HENRY R. PATTENGILL,
SUPERINTENDENT OF PUBLIC INSTRUCTION.
(Office at Lansing.)

BOARD OF VISITORS.

HON. JAMES McMILLAN,	<i>Detroit.</i>
HON. LYMAN D. NORRIS,	<i>Grand Rapids.</i>
HON. GEORGE A. CADY,	<i>Sault Ste. Marie.</i>

* Appointed in place of Hon. Charles S. Draper, deceased.

Members of the Faculties

AND OTHER OFFICERS.*

Permanent Appointments and Appointments for Terms longer than One Year.

- JAMES B. ANGELL, LL.D., PRESIDENT. South University Avenue.
CORYDON L. FORD, M.D., LL.D., *Professor of Anatomy and Physiology.* 64 Washtenaw Avenue.
ALBERT B. PRESCOTT, PH.D., M.D., *Director of the Chemical Laboratory, Professor of Organic Chemistry, and Dean of the School of Pharmacy.* 50 South Ingalls Street.
REV. MARTIN L. D'OOGHE, LL.D., *Professor of the Greek Language and Literature, and Dean of the Department of Literature, Science, and the Arts.* 77 Washtenaw Avenue.
CHARLES E. GREENE, A.M., C.E., *Professor of Civil Engineering.* 37 East William Street.
JONATHAN TAFT, M.D., D.D.S., *Professor of the Principles and Practice of Oral Pathology and Surgery, and Dean of the College of Dental Surgery.* 23 North University Avenue.
WILLIAM H. PETTEE, A.M., *Professor of Mineralogy, Economic Geology, and Mining Engineering.* 52 Thompson Street.
JOHN A. WATLING, D.D.S., *Professor of Operative and Clinical Dentistry.* Huron Street, Ypsilanti.
JOSEPH B. STEERE, PH.D., *Professor of Zoölogy.* South Ypsilanti Road.
EDWARD L. WALTER, PH.D., *Professor of Romance Languages and Literatures.* 93 South State Street.
ISAAC N. DEMMON, A.M., *Professor of English and Rhetoric.* 76 Washtenaw Avenue.
WILLIAM H. DORRANCE, D.D.S., *Professor of Prosthetic Dentistry and Dental Metallurgy.* 42 South Ingalls Street.
ALBERT H. PATTENGILL, A.M., *Professor of Greek.* 40 South Ingalls Street.

*The names of Professors (including Librarian), Assistant Professors (including Superintendent of Shops), and other officers are placed in their appropriate divisions, according to term of appointment and length of continuous service with present rank.

- MORTIMER E. COOLEY, M.E., *Professor of Mechanical Engineering.*
32 Packard Street.
- WILLIAM J. HERDMAN, Ph.B., M.D., *Professor of Nervous Diseases and Electrotherapeutics.*
48 East Huron Street.
- WOOSTER W. BEMAN, A.M., *Professor of Mathematics.*
61 East Kingsley Street.
- VICTOR C. VAUGHAN, Ph.D., M.D., *Professor of Hygiene and Physiological Chemistry, Director of the Hygienic Laboratory, and Dean of the Department of Medicine and Surgery.*
15 South State Street.
- HENRY L. OBETZ, M.D., *Professor of Surgery and Clinical Surgery, and Dean of the Homœopathic Medical College.*
20 West High Street, Detroit.
- *THOMAS M. COOLEY, LL.D., *Professor of American History and Constitutional Law.*
76 South State Street.
- CHARLES S. DENISON, M.S., C.E., *Professor of Descriptive Geometry, Stereotomy, and Drawing.*
23 South Division Street.
- JAMES C. WOOD, A.M., M.D., *Professor of Obstetrics and Diseases of Women and Children in the Homœopathic Medical College.*
66 South Fourth Avenue.
- DANIEL A. MACLACHLAN, M.D., *Professor of Ophthalmology, Otology, and Pædology in the Homœopathic Medical College, and Secretary of the Homœopathic Faculty.*
26 South Division Street.
- HENRY S. CARHART, A.M., *Professor of Physics, and Director of the Physical Laboratory.*
7 Monroe Street.
- LEVI T. GRIFFIN, A.M., *Fletcher Professor of Law.*
148 Henry Street, Detroit.
- RAYMOND C. DAVIS, A.M., *Librarian.*
15 Church Street.
- VOLNEY M. SPALDING, A.B., *Professor of Botany.*
50 Thompson Street.
- HENRY C. ADAMS, Ph.D., *Professor of Political Economy and Finance.*
11 Monroe Street.
- CALVIN THOMAS, A.M., *Professor of Germanic Languages and Literatures.*
76 Hill Street.
- HENEAGE GIBBES, M.D., *Professor of Pathology.*
16 Forest Avenue.
- BURKE A. HINSDALE, Ph.D., *Professor of the Science and the Art of Teaching.*
13 Church Street.
- †RICHARD HUDSON, A.M., *Professor of History.*
- BRADLEY M. THOMPSON, M.S., LL.B., *Jay Professor of Law.*
25 East University Avenue.
- ALBERT A. STANLEY, A.M., *Professor of Music.*
19 South Ingalls Street.

*Professor Cooley has leave of absence, but delivers a brief course of lectures on the law of interstate commerce to advanced students in the Department of Law.

†Absent on leave.

-
- JOHN DEWEY, PH.D., *Professor of Philosophy.* 15 Forest Avenue.
- *FRANCIS W. KELSEY, PH.D., *Professor of the Latin Language and Literature.*
- JEROME C. KNOWLTON, A.B., *Marshall Professor of Law, and Dean of the Department of Law.* 77 East Huron Street.
- CHARLES GATCHELL, M.D., *Professor of the Theory and Practice of Medicine in the Homœopathic Medical College.* 23 South Division Street.
- CHARLES S. MACK, A.B., M.D., *Professor of Materia Medica and Therapeutics in the Homœopathic Medical College.* 17 South State Street.
- CHARLES B. NANCREDE, M.D., *Professor of Surgery and Clinical Surgery in the Department of Medicine and Surgery.* 4 Cornwell Place.
- FLEMMING CARROW, M.D., *Professor of Ophthalmic and Aural Surgery and Clinical Ophthalmology in the Department of Medicine and Surgery.* 51 East Huron Street.
- OTIS C. JOHNSON, PH.C., A.M., *Professor of Applied Chemistry.* 52 South Thayer Street.
- PAUL C. FREER, PH.D., M.D., *Professor of General Chemistry, and Director of the Laboratory of General Chemistry.* 90 South State Street.
- JAMES N. MARTIN, PH.M., M.D., *Professor of Obstetrics and Diseases of Women in the Department of Medicine and Surgery.* 16 North State Street.
- JOHN J. ABEL, PH.D., M.D., *Professor of Materia Medica and Therapeutics in the Department of Medicine and Surgery.* 3 Volland Street.
- NELVILLE S. HOFF, D.D.S., *Professor of Dental Materia Medica and Dental Mechanism.* 79 South State Street.
- GEORGE DOCK, M.D., *Professor of the Theory and Practice of Medicine and Clinical Medicine in the Department of Medicine and Surgery.* 24 East Jefferson Street.
- JOHN W. CHAMPLIN, LL.D., *Professor of Law.* Grand Rapids.
- EDWIN F. CONELY, *Professor of Law.* 600 Cass Avenue, Detroit.
- ANDREW C. McLAUGHLIN, A.B., LL.B., *Professor of American History.* 41 South Twelfth Street.
- JOSEPH B. DAVIS, C.E., *Professor of Geodesy and Surveying.* 51 South Ingalls Street.
- ASAPH HALL, JR., PH.D., *Professor of Astronomy, and Director of the Observatory.* Observatory.
- ISRAEL C. RUSSELL, M.S., C.E., *Professor of Geology.* 13 Forest Avenue.
- FLOYD R. MECHEM, *Tappan Professor of Law.* 175 Palmer Avenue, Detroit.
-

* Absent on leave.

-
- JACOB E. REIGHARD, PH.D., *Professor of Animal Morphology.*
12½ North Thayer Street.
- THOMAS C. TRUEBLOOD, A.M., *Professor of Elocution and Oratory.*
88 Hill Street.
- P. R. DEPONT, A.B., B.S., *Assistant Professor of French, and Registrar of the Department of Literature, Science, and the Arts.*
23 East Jefferson Street.
- CLARENCE G. TAYLOR, B.S., *Superintendent of Shops in Engineering Laboratory.*
20 South University Avenue.
- GEORGE HEMPL, PH.D., *Assistant Professor of English.*
67 Washtenaw Avenue.
- EDWARD D. CAMPBELL, B.S., *Assistant Professor of Metallurgy.*
108 Hill Street.
- JOSEPH H. DRAKE, A.B., *Assistant Professor of Latin.*
23 North University Avenue.
- FRED N. SCOTT, PH.D., *Assistant Professor of Rhetoric.*
1 College Street.
- FRANK N. COLE, PH.D., *Assistant Professor of Mathematics.*
24 Forest Avenue.
- FREDERICK G. NOVY, Sc.D., M.D., *Assistant Professor of Hygiene and Physiological Chemistry.*
25½ Lawrence Street.
- ALEXANDER ZIWET, C.E., *Assistant Professor of Mathematics.*
14 South State Street.
- GEORGE W. PATTERSON, Jr., A.M., S.B., *Assistant Professor of Physics.*
14 South University Avenue.
- CARL W. BELSER, PH.D., *Assistant Professor of Oriental Languages.*
9 Olivia Avenue.
- GEORGE A. HENCH, PH.D., *Assistant Professor of German.*
40 South Ingalls Street.
- FRANK C. WAGNER, A.M., B.S., *Assistant Professor of Mechanical Engineering.*
43½ South Twelfth Street.
- GOTTHELF C. HUBER, M.D., *Assistant Professor of Histology.*
55 East Ann Street.
- FRED M. TAYLOR, PH.D., *Assistant Professor of Political Economy and Finance.*
17 Church Street.
- ALVISO B. STEVENS, PH.C., *Assistant Professor of Pharmacy.*
52 South Thayer Street.
- WILLIAM A. CAMPBELL, M.D., *Demonstrator of Anatomy, and Secretary of the Faculty of the Department of Medicine and Surgery.*
21 South State Street.
- JOSEPH H. VANCE, LL.B., *Assistant Librarian, in charge of the Law Library.*
Ann Arbor Town.
- JOSEPH CLARK, *Superintendent of Hospitals.*
8 Cornwell Place.
- HAMILTON REEVE, *Superintendent of Buildings.*
44 East University Avenue.

Non-Resident Lecturers on Special Topics for 1892-93.

- HENRY B. BROWN, LL.D., *Lecturer on Admiralty.*
Washington, D. C.
- MARSHALL D. EWELL, LL.D., *Lecturer on Medical Jurisprudence.*
Chicago, Ill.
- SAMUEL MAXWELL, *Lecturer on Code Pleading and Practice.*
Fremont, Neb.
- JAMES L. HIGH, LL.D., *Lecturer on Injunctions and Receivers.*
Chicago, Ill.
- JOHN B. CLAYBERG, LL.B., *Lecturer on Mining Law.* Helena, Mon.
- MELVILLE M. BIGELOW, Ph.D., *Lecturer on Insurance.*
Cambridge, Mass.
- GEORGE H. LOTHROP, Ph.B., *Lecturer on Patent Law.*
143 Fort Street West, Detroit.
- WILLIAM G. HAMMOND, LL.D., *Lecturer on the History of Common Law.*
St. Louis, Mo.

Other Appointments for 1892-93.

- WARREN P. LOMBARD, A.B., M.D., *Professor of Physiology and Histology.*
86 South State Street.
- JOHN C. ROLFE, Ph.D., *Acting Professor of the Latin Language and Literature.*
47 South Division Street.
- DAVID E. SPENCER, A.M., *Acting Assistant Professor of History.*
60 East Huron Street.
- WILLIAM F. BREakey, M.D., *Lecturer on Dermatology.*
54 East Huron Street.
- VICTOR C. VAUGHAN, Ph.D., M.D., *Lecturer on Toxicology in its Legal Relations in the Department of Law.* 15 South State Street.
- HENRY C. ADAMS, Ph.D., *Lecturer on the Railroad Problem in the Department of Law.* 11 Monroe Street.
- ANDREW C. McLAUGHLIN, A.B., LL.B., *Lecturer on Constitutional Law and Constitutional History in the Department of Law.*
41 South Twelfth Street.
- JOSEPH L. MARKLEY, Ph.D., *Instructor in Mathematics.*
28 Packard Street.
- WILLARD K. CLEMENT, Ph.D., *Instructor in Latin.*
48 South Twelfth Street.
- MORITZ LEVI, A.B., *Instructor in French.*
49 South University Avenue.
- FRED MORLEY, C.E., *Instructor in Descriptive Geometry and Drawing.*
91 East University Avenue.
- ELMER A. LYMAN, A.B., *Instructor in Mathematics.*
9 Lawrence Street.
- HIRAM A. SOBER, A.B., *Instructor in Latin.* 74 Washtenaw Avenue.

- GEORGE O. HIGLEY, B.S., *Instructor in General Chemistry.*
18 Willard Street.
- ARTHUR G. HALL, B.S., *Instructor in Mathematics.*
45 Thompson Street.
- GEORGE H. MEAD, A.B., *Instructor in Philosophy.*
56 South University Avenue.
- ALFRED H. LLOYD, A.M., *Instructor in Philosophy.*
6 Cornwell Place.
- RAYMOND L. WEEKS, A.M., *Instructor in French.* Pontiac Street.
- JONATHAN A. C. HILDNER, A.B., *Instructor in German.*
59½ South Division Street.
- HERMAN V. AMES, Ph.D., *Instructor in History.*
60 East Huron Street.
- GEORGE REBEC, Ph.B., *Instructor in English.*
44 East Kingsley Street.
- SIMON M. YUTZY, M.D., *Instructor in Osteology, Assistant Demonstrator of Anatomy, and Assistant to the Professor of Anatomy and Physiology.*
7 North University Avenue.
- ELIAS F. JOHNSON, B.S., LL.M., *Instructor in Law.*
31 North University Avenue.
- ERNST VOSS, *Instructor in German.* 30 North Division Street.
- DAVID M. LICHTY, M.S., *Instructor in General Chemistry.*
7 North University Avenue.
- GEORGE H. ROWE, B.S., *Instructor in Electrical Engineering.*
19 Church Street.
- JOHN O. REED, Ph.M., *Instructor in Physics.*
47 South University Avenue.
- BENJAMIN P. BOURLAND, A.M., *Instructor in French.*
28 South Division Street.
- JOHN R. EFFINGER, Ph.B., *Instructor in French.*
Corner of Hill Street and Washtenaw Avenue.
- MARTIN L. BELSER, M.D., *Instructor in Pathology.* Forest Avenue.
- JULIUS O. SCHLOTTERBECK, Ph.C., B.S., *Instructor in Pharmacy.*
36 Church Street.
- LORENZO N. JOHNSON, A. M., *Instructor in Botany.*
47 South University Avenue.
- HERBERT F. DE COU, A.M. *Instructor in Greek and Sanskrit.*
19 North Thayer Street.
- ELMER L. ALLOR, B.S., *Instructor in Astronomy.* Observatory.
- HENRY B. WARD, Ph.D., *Instructor in Morphology.* 70 Hill Street.
- ERNST H. MENSEL, A.M., *Instructor in German.* 28 Monroe Street.
- LAWRENCE MCLOUTH, A.B., *Instructor in German.*
10 North State Street.
- GEORGE F. METZLER, Ph.D., *Instructor in Mathematics.*
31 Lawrence Street.
- EARLE W. DOW, A.B., *Instructor in History.* 10 North State Street.

- WILLIAM F. EDWARDS, B.S., *Accountant and Dispensing Clerk in the Chemical Laboratory.* 48 East University Avenue.
- JAMES G. LYNDS, M.D., *Demonstrator of Obstetrics and Diseases of Women in the Department of Medicine and Surgery.* 30 South State Street.
- ALICE L. HUNT, *Assistant in Drawing.* 16 South Thayer Street.
- FRED P. JORDAN, A.B., *Assistant in the General Library in charge of Catalogue.* 48 South Twelfth Street.
- LOUIS P. HALL, D.D.S., *Assistant to the Professor of Operative and Clinical Dentistry.* Corner of Hill Street and Washtenaw Avenue.
- CYRENUS G. DARLING, M.D., *Demonstrator of Surgery in the Department of Medicine and Surgery, and Clinical Lecturer on Oral Pathology in the College of Dental Surgery.* 38 East University Avenue.
- MOSES GOMBERG, M.S., *Assistant in Organic Chemistry.* 69 South University Avenue.
- ERNEST A. CLARK, M.D., *Assistant to the Professor of Surgery in the Homeopathic Medical College.* 28 South Main Street.
- BERNHARD C. HESSE, Ph.C., *Assistant in Qualitative Analysis.* 36 Packard Street.
- WILLIAM L. MOORE, M.D., *Demonstrator of Nervous Diseases and Electrotherapeutics.* 61 East Washington Street.
- ELMER E. HAGLER, M.D., *Demonstrator of Ophthalmology in the Department of Medicine and Surgery.* 61 East Washington Street.
- ARCHIBALD MUIRHEAD, *Assistant to the Professor of Materia Medica and Therapeutics in the Department of Medicine and Surgery.* 3 Volland Street.
- EUGENE H. ROBERTSON, Ph.B., *Assistant in Physiological Chemistry.* 11 North State Street.
- BYRON A. FINNEY, A.B., *Assistant in the General Library in charge of Circulation.* 74 East Huron Street.
- CHARLES T. McCLINTOCK, Ph.D., *Assistant to the Professor of Hygiene.* 31 North University Avenue.
- ALDRED S. WARTHIN, A.M., M.D., *Demonstrator of Clinical Medicine in the Department of Medicine and Surgery.* 42 East Liberty Street.
- ANDERSON H. HOPKINS, Ph.B., *Assistant in the General Library.* 9 South State Street.
- CHARLES H. COOLEY, A.B., *Assistant in Political Economy.* 76 South State Street.
- FRANK H. DIXON, Ph.B., *Assistant in Political Economy.* 58 East University Avenue.
- AUGUSTUS W. REED, M.D., *House Surgeon in the University Hospital.* University Hospital.
- PERRY BRIGGS, Ph.C., *Pharmacist in the University Hospital.* 11 Wilmot Street.

- JOSEPH B. WHINERY, PH.C., M.D., *Assistant to the Professor of the Theory and Practice of Medicine and Clinical Medicine in the Department of Medicine and Surgery.* 20 North Thayer Street.
- WILLIAM L. R. DUNN, PH.C., M.D., *Assistant to the Professor of Surgery and Clinical Surgery in the Department of Medicine and Surgery.* 10½ South State Street.
- ORTON H. CLARK, M.D., *Assistant to the Professor of Obstetrics and Diseases of Women in the Department of Medicine and Surgery.* 47 East Ann Street.
- GEORGE F. SUKER, M.D., *Assistant to the Professor of Ophthalmic and Aural Surgery and Clinical Ophthalmology in the Department of Medicine and Surgery.* 92 East Washington Street.
- ALLISON W. HAIDLE, D.D.S., *Assistant in Mechanical Dentistry.* 114 South State Street.
- WILLIAM A. KICKLAND, B.S., *Assistant in Vertebrate Morphology.* 30 Maynard Street.
- JEANNE C. SOLIS, M.D., *Assistant to the Professor of Nervous Diseases in the Department of Medicine and Surgery.* 20 South Ingalls Street.
- NELSON H. CHAMBERLAIN, M.D., *Resident Physician in the Homœopathic Hospital.* Homœopathic Hospital.
- CHARLES W. BEHM, M.D., *Assistant to the Professor of the Theory and Practice of Medicine, and to the Professor of Materia Medica and Therapeutics in the Homœopathic Medical College.* 28 South Fifth Avenue.
- CYRUS M. THURSTON, M.D., *Assistant to the Professor of Obstetrics and Diseases of Women and Children in the Homœopathic Medical College.* 39 East Huron Street.
- FRED J. PECK, M.D., *Assistant to the Professor of Ophthalmology, Otology, and Pedology in the Homœopathic Medical College.* 28 South Main Street.
- RICHARD FISCHER, PH.C., *Assistant in Qualitative Analysis.* 11 Wilmot Street.
- ROY D. YOUNG, PHAR.M., *Assistant in Pharmacy.* 37 Church Street.
- CLARISSA S. BIGELOW, PH.B., *Assistant Demonstrator of Anatomy.* 45 Washtenaw Avenue.
- JOHN W. DWYER, LL.B., *Quizmaster in the Department of Law.* 50 East Kingsley Street.
- FRED A. SHELDON, LL.B., *Quizmaster in the Department of Law.* 37½ South Ingalls Street.
- FRANK M. WELLS, LL.B., *Quizmaster in the Department of Law.* 46 East University Avenue.
- MARIS T. KENDIG, LL.B., *Quizmaster in the Department of Law.* 24 North State Street.
- ROBERT F. THOMPSON, LL.B., *Quizmaster in the Department of Law.* 38 Packard Street.

PAUL H. SEYMOUR, B.S., *Assistant in General Chemistry.*
18 South Thayer Street.

Foremen in the Engineering Laboratory.

ROBERT A. WINSLOW, <i>Foundry.</i>	32 Wall Street.
JOHN M. SMOOTS, <i>Iron Room.</i>	58 East University Avenue.
HORACE T. PURFIELD, <i>Wood Room.</i>	36 South Twelfth Street.
THOMAS ORR, <i>Forge Shop.</i>	44 East William Street.

UNIVERSITY OF MICHIGAN.

THE UNIVERSITY AND THE STATE.

THE University of Michigan is a part of the public educational system of the State. The governing body of the institution is a Board of Regents, elected by popular vote for terms of eight years, as provided in the Constitution of the State. In accordance with the law of the State, the University aims to complete and crown the work that is begun in the public schools, by furnishing ample facilities for liberal education in literature, science, and the arts, and for thorough professional study of medicine, pharmacy, law, and dentistry. Through the aid that has been received from the United States and from the State, it is enabled to offer its privileges, without charge for tuition, to all persons of either sex, who are qualified for admission. While Michigan has endowed her University primarily for the higher education of her own sons and daughters, it must be understood that she also opens the doors of the institution to all students, wherever their homes. It is in this broad, generous, and hospitable spirit, that the University has been founded, and that it endeavors to do its work.

ORGANIZATION OF THE UNIVERSITY.

The University comprises the Department of Literature, Science, and the Arts, the Department of Medicine and Surgery, the Department of Law, the School of Pharmacy, the Homœopathic Medical College, and the College of Dental Surgery. Each Department has its special Faculty. The University Senate is composed of all the faculties, and considers questions of common interest and importance to them all.

In the Department of Literature, Science, and the Arts, different lines of study lead to the degrees of Bachelor of Arts, Bachelor of Philosophy, Bachelor of Science, Bachelor of Letters, the corresponding Masters' degrees, the degrees of Doctor of Philosophy, Doctor of Science, and Doctor of Letters, and the degrees of Civil Engineer, Mechanical Engineer, Mining Engineer, and Electrical Engineer. The degree of Bachelor of Science is given for the course in general science, and for the special courses in engineering, in chemistry, and in biology.

In the professional schools the instruction is given largely by lectures. The degrees given are as follows: In the Department of Medicine and Surgery, the degree of Doctor of Medicine; in the Department of Law, the degrees of Bachelor of Laws and Masters of Laws; in the School of Pharmacy, the degrees of Pharmaceutical Chemist and Master of Pharmacy; in the Homœopathic Medical College, the degree of Doctor of Medicine; in the College of Dental Surgery, the degree of Doctor of Dental Surgery.

Students in any department of the University may enter the classes in any other, upon obtaining permission from the Faculties of the respective departments.

THE LIBRARIES.

The libraries of the University are the General Library, the Medical Library, the Law Library, and the Library of the College of Dental Surgery. They contained in the aggregate, September 30, 1892, 82,347 volumes, 15,930 unbound pamphlets, and 726 maps.

THE GENERAL LIBRARY contains 65,942 volumes, 14,868 unbound pamphlets, and 726 maps. In this enumeration are included the following special collections: Parsons Library (political economy), 4,325 volumes and 5,000 pamphlets; McMillan Shakespeare Library, 3,494 volumes; Hagerman Collection (history and political science), 2,600 volumes; Goethe Library, 848 volumes; Dorsch Library (miscellaneous), 1,676 volumes and 148 pamphlets.

Two hundred periodicals are taken.

The catalogue of the library is the usual card catalogue of authors and subjects.

Members of the Faculties and other officers of the University may draw books from the library, subject to certain restrictions. To all other persons it is a reference library. The reading room for general use will seat 210 readers. Separate rooms are provided for advanced students where work is pursued with the necessary books at hand.

The library is open for consultation eleven and one-half hours daily during the academic year, and six hours daily during the three months of

the summer vacation. The only exceptions to the above are Sundays and legal holidays.

The MEDICAL LIBRARY, containing 5,089 volumes and 1,062 unbound pamphlets, is shelved with the General Library, and is consulted under the same regulations. Ninety-one medical journals are regularly received.

The LAW LIBRARY occupies the large room on the first floor of the law building. In 1885 it was greatly increased by the generosity of Mr. Christian H. Buhl, of Detroit, who presented to the University a large collection of law books. This library now contains 10,744 volumes.

The LIBRARY OF THE COLLEGE OF DENTAL SURGERY is shelved in a room in the dental building. It contains several sets of valuable periodicals and many of the most important treatises on the theory and practice of dentistry. The whole number of volumes is 572. Thirteen dental periodicals are taken.

THE ASTRONOMICAL OBSERVATORY.

The Observatory is known as the Detroit Observatory, having been founded through the liberality of citizens of Detroit. Valuable additions and improvements have been made by contributions from several sources. The building consists of a main part, with a movable dome, and two wings. The meridian circle in the east wing was presented by Mr. Henry N. Walker, of Detroit. It was constructed by Pistor & Martins, of Berlin, and is one of the largest and best of the kind. The same wing contains a sidereal clock, made by Tiede, of Berlin, and the collimators for the meridian circle. The west wing contains the observatory library and a set of self-registering meteorological instruments. It connects with the residence of the Director. The refracting telescope, mounted in the dome, has an object glass thirteen inches in diameter. It was constructed by the late Henry Fitz, of New York.

A small observatory near the main building is used in the work of instruction. It contains an equatorial telescope of six inches aperture, and a transit instrument of three inches aperture, with zenith telescope attachment. A separate building contains computing rooms and rooms for observers.

THE MUSEUMS.

The University Museums contain collections illustrative of natural history, the industrial arts, chemistry, materia medica, anatomy, archæology, ethnology, the fine arts, and history, arranged in such a way as to render them accessible both to students and to visitors. The University affords a secure depository for objects of value and curiosity, and it is hoped that frequent gifts will be made to its several museums.

The museum building contains the collections in natural history, the industrial arts, archaeology and ethnology, and the Chinese exhibit. The collections of works of art, including historical medallions and coins, are in the art gallery.

The following descriptions indicate the character of some of the collections belonging to the University. The collections specially used for instruction in medicine and in dentistry will be found described in the chapters devoted to the medical and the dental schools.

NATURAL HISTORY.

I. THE MINERALOGICAL COLLECTION comprises about 6,000 specimens. It embraces about 2,500 specimens (principally European) purchased of the late BARON LEDERER, and known as the LEDERER COLLECTION; and, besides others, a rich collection of the MINERAL SPECIES OF MICHIGAN, including all varieties of copper ore and associated minerals from the Lake Superior mining region.

II. The GEOLOGICAL COLLECTION consists of:

1. The large series of lithological and palæontological specimens brought together by the State geological surveys, of which over a hundred fossil species have become the types of original descriptions.

2. The WHITE COLLECTION, consisting of 1,018 distinct entries, 6,000 specimens, of invertebrate fossils.

3. The ROMINGER COLLECTION, including what has previously been called the ROMINGER DEPOSIT, and embracing about 5,000 species of invertebrate fossils, represented by at least 25,000 specimens. The collection contains (1) the types of all Dr. Rominger's original descriptions of palæozoic corals as contained in the Geological Report of Michigan, volume iii.,—not alone the specimens figured, but numerous specimens of each species, which are not duplicates, but illustrations of different characters and varieties; (2) a collection of *Stromatoporoids*—probably the largest and finest in the world; (3) a similar collection of *Bryozoa*; (4) palæozoic fossils belonging to all the other classes; (5) European fossils of all classes and ages in large number—the sponges forming, with the American species, a collection of great interest. These species exist in a state of beautiful and, many times, unusual perfection. Since the purchase of the collection by the University, Dr. Rominger has added to it more than 250 species of invertebrate fossils, represented approximately by 1,000 specimens, among which there are many of great value.

4. SMITHSONIAN DEPOSITS, consisting, for the present, of a collection of specimens of foreign and domestic building stones, and twenty-three specimens of fossils from the Upper Missouri.

5. MISCELLANEOUS DONATIONS, COLLECTIONS, AND PURCHASES, including a series illustrative of the metalliferous regions of the Upper

Peninsula, collected by the late Professor Winchell, an interesting collection of fossils, chiefly cretaceous, from the Yellowstone Valley, presented by the late General Custer, U. S. A., and a series of six to eight hundred rock species and varieties from the Drift of Ann Arbor, collected, dressed to standard size and form, and presented by the late Miss Eliza J. Patterson. A collection of 150 specimens of ores and rocks has recently been presented by the U. S. National Museum; and Professor Russell has added as many more specimens illustrating various geological phenomena.

The entire collection is estimated to contain approximately 17,000 entries and about 60,000 specimens, almost all of which are invertebrate fossils. The collections presented by the National Museum and by Professor Russell pertain to physical geology, and in the future an effort will be made to illustrate the physical history of the earth as thoroughly as its life-history is now shown.

III. The ZOÖLOGICAL COLLECTIONS are very large, comprising about 110,000 specimens under about 23,250 entries. There is a full series illustrative of the fauna of Michigan and other northern and western States. The animals of the Pacific coast are well represented in the collection made by Lieutenant Trowbridge, and large additions from foreign countries have been made through the medium of the Smithsonian Institution. A series of the valuable specimens collected in the Philippine Islands, by Professor Steere, in the years 1887 and 1888, now forms a part of the collection.

The BEAL-STEERE ZOÖLOGICAL COLLECTION, made by Professor Steere in the years 1870 to 1876, comprises about 25,000 insects, 1,500 shells, 8,000 birds, and numerous representatives of other groups; total about 10,000 entries, 60,000 specimens.

IV. The BOTANICAL COLLECTION contains, in addition to Michigan plants collected by the public surveys, several valuable herbaria and sets of plants that have been presented to the University from time to time. Among these, some of the most important are the HOUGHTON HERBARIUM, the SAGER HERBARIUM, the AMES HERBARIUM, the HARRINGTON COLLECTION, the BEAL-STEERE BOTANICAL COLLECTION, the ADAMS-JEWETT COLLECTION, and the GARRIGUES COLLECTION, all of which have been described in Calendars of previous years.

Among the more recent acquisitions are a set of native woods of the United States, collected and presented to the University by Professor C. S. Sargent, Director of the Arnold Arboretum of Harvard University; a set of 3,000 species of North American fungi, presented by Mr. Joseph B. Whittier, of East Saginaw; and a set of specimens illustrating the flora of the Lake Superior region, presented by Mr. Frank A. Wood. Sections of representative specimens of the most important coniferous trees of the eastern United States have lately been secured through the

courtesy of Mr. B. E. Fernow, Chief of the Forestry Division of the U. S. Department of Agriculture.

The whole botanical cabinet contains about 70,000 specimens, representing 10,000 species under 20,000 entries.

INDUSTRIAL COLLECTIONS.

The nucleus of an industrial museum has long existed in the botanical and zoölogical cabinets, the cabinet of economic geology, the museum of applied chemistry, a collection of the seeds of cereals and other field and garden crops, and an interesting collection of textile fibres and various substitutes for cotton. The University is desirous of enlarging these collections.

CHINESE EXHIBIT.

In 1885 the Chinese Government presented to the University the exhibit which it sent to the New Orleans Exposition. The whole collection, numbering several thousand specimens, is now on exhibition in a room set apart for its reception in the museum building. It illustrates with special fulness the varieties of Chinese cotton, the Chinese processes of manufacturing cotton, and the finished products of cotton and of silk. There are many articles showing the skill of the Chinese in working in wood, in ivory, and in porcelain, in embroidery, and in painting on glass and on silk.

CHEMISTRY AND PHARMACOGNOSY.

THE MUSEUM OF APPLIED CHEMISTRY comprises collections in educational chemistry, the chemical industries, pharmacy, and pharmacognosy. It occupies a floor space of 2,500 square feet in the chemical building, and is provided with permanent cases.

The principles of chemical science are illustrated by groups of synthetic products, as progressive formations, and by related compounds, both natural and artificial.

The chemical industries are represented by collections of the materials and the successive products of manufacture, and the resources and methods of industrial art. The outlines of chemical technology are presented with models and plans, giving object lessons in the modern production of alkalis and acids, dyes and pigments, soaps, distillates, etc.

In pharmacognosy, the collection of medicinal plants is extensive and well chosen for instruction both in botany and in commercial history. The crude drugs are displayed in comparison with their active constituents, each in its proportional quantity.

Pharmacy is exemplified in the preparations of the pharmacopœia and the appliances of skilful manipulation. A working prescription-stand of original design is included for the instruction of students.

Of all these collections a good share originates in the work of students engaged in special lines of study and research.

ARCHÆOLOGY AND ETHNOLOGY.

This department contains a collection of the arms, agricultural implements, carpenter's tools, musical instruments, and idols of the Chinese, belonging to the BEAL-STEERE COLLECTION, together with many articles of domestic and warlike use among the North American Indians and the Islanders of the South Pacific, numerous remains of the ancient Peruvians, and many specimens of clothing, art, etc., of the Amazonian Indians, modern Peruvians, Formosans, and natives of the East Indies and Alaska. The Chinese exhibit above referred to contains a large number of articles illustrative of ethnology. From the Smithsonian Institution there have been received a comprehensive collection of casts of objects from Europe and from the mounds of the Ohio valley, and a fine collection of flint implements from Denmark. The valuable collection made by the late David De Pue, mostly from Washtenaw County, Mich., has recently been purchased for the University.

THE FINE ARTS AND HISTORY.

The works of art belonging to the University are on exhibition in the galleries provided for them in the library building. A printed catalogue, prepared by Professor D'Ooge contains fuller descriptions than can here be given. The collection was begun in 1855. It contains a gallery of casts, in full size and in reduction, of some of the most valuable ancient statues and busts, such as the Apollo Belvedere, the Laocoön, the Sophocles, a gallery of more than two hundred reductions and models in terra cotta and other materials; the statue of Nydia by Randolph Rogers; casts of modern statues, busts, etc., and reliefs; a number of engravings and photographic views, illustrating especially the architectural and sculptural remains of ancient Italy and Greece; a small collection of engraved copies of the great masterpieces of modern painting; two series of historical medallions—the HORACE WHITE COLLECTION, and the GOVERNOR BAGLEY COLLECTION—the former illustrative of ancient, mediæval, and modern European history, the latter designed to embrace the commemorative medals struck by order of Congress or other authorities, and now containing one hundred such medals; and a large collection of coins, chiefly Greek and Roman, presented to the University by the late Dr. A. E. Richards.

The ROGERS GALLERY comprises the entire collection of the original casts of the works of the late Randolph Rogers, more than a hundred in number. It was given by that distinguished sculptor to the State of Michigan for the University museum.

The late Henry C. Lewis, of Coldwater, by his will bequeathed to the University his valuable collection of works of art, comprising about six hundred and fifty paintings and forty pieces of statuary. The collection remains for the present at Coldwater, but will ultimately be transferred to the University gallery.

THE LABORATORIES.

In the several laboratories of the University opportunities are provided for practical instruction in physics, chemistry, geology, zoölogy, botany, engineering, histology, physiology, hygiene, pathology, anatomy, and dentistry. The laboratories used chiefly by students of medicine and of dentistry are described in the chapters devoted to the medical and the dental schools.

PHYSICAL LABORATORY.

The physical laboratory contains about 11,000 square feet of floor space. The basement, which is devoted entirely to experimental work in electricity and magnetism, has a German rock-asphaltum floor, with heavy stone-capped piers in every work room. The engine room contains a 10" by 14" Russell horizontal engine with countershaft and friction clutch, an Edison shunt-wound dynamo of 5,000 watts capacity, a Sperry and a Brush 10-arc-light machine, with lamps for both, a Gramme machine of 5,000 watts made in 1877, a Fort Wayne 300-light alternator, with converters and all the appliances for a complete alternating plant, and a Fisher 225-light constant-potential machine. In an adjacent room are placed electrodynometers, ammeters, voltmeters, a wall resistance of iron wire constructed to absorb about 35 H-P of electrical energy, and a bank of 225 incandescent lamps. The photometric room, with blackened walls, and lighted only artificially, is also adjacent to the engine room.

A battery room, well ventilated and lighted, and supplied with water, contains a storage battery of thirty-two cells. Five smaller work rooms are fitted with the usual appliances for electrical measurements.

On the first floor are a commodious lecture room, an apparatus room, a general laboratory for elementary work, a balance room, a mercury room, and two rooms for a private laboratory.

The laboratory is supplied with the most modern apparatus from the best American and European makers. In sound, it includes tuning forks and resonators from Koenig of Paris; in light, a spectrometer with 12-inch divided circle, and an ophthalmo-spectroscope from the Geneva Society; in electricity, galvanometers and resistance boxes, up to 250,000 units, from Edelmann, Hartmann & Braun, Elliott Brothers, Nalder Brothers & Co., and Queen & Co., besides condensers, voltmeters, and ammeters; also Sir William Thomson's graded galvanometers, a centi-ampere, a deci-ampere, and a deka-ampere balance made by White, of Glasgow. Among the standards are standard cells, a standard 100-ohm, a 10-ohm, and three 1-ohm coils, two standard condensers, and Ayrton and Perry's standard of self-induction, with a secohmmeter by Nalder Brothers.

The work in the laboratory is entirely quantitative in character, but provision has been made for illustrating the general principles of physics in the lecture courses.

CHEMICAL LABORATORIES.

The chemical laboratories provide for classes in analytical, general, and organic chemistry, in pharmacy and chemical technology, in metallurgy and assaying. Opportunities are given for original research in the several branches of chemical science and for independent investigations. In the course of the year, classes are formed in thirty-six distinct courses of study. In the greater number of these courses the method of work combines training in laboratory operations with study for recitations and instruction by lectures,—the three requirements being united in one course.

The chemical building contains in all about 36,000 square feet of floor space. Beside the rooms for recitations, storage, administration, etc., the laboratories for students have an area of about 25,000 square feet.

The laboratory of general chemistry is separately organized and supplied. Courses in elementary inorganic chemistry, as well as in the advanced branches of the science are offered; research work both in inorganic and in organic general chemistry is also arranged for a limited number of students. Modern apparatus is provided for all the varieties of work that are liable to be undertaken.

The laboratories of analytical chemistry, organic chemistry, pharmacy, and chemical technology are all under one organization and are supplied in common. There are separate work rooms for qualitative analysis, quantitative analysis, iron and steel analysis, pharmaceutical preparations, organic preparations, organic analysis, medical chemistry, and assaying of ores,—as well as rooms for the weighing-balances and instruments of precision, for gas analysis, and for optical work. There are separate rooms for original research. The building contains two lecture rooms, two recitation rooms, and a museum with collections for instruction in chemistry, pharmacy, pharmacognosy, and chemical technology. The work rooms are ventilated by fans, and each worker's table is supplied with gas, water, and waste-pipes.

The chemical laboratories are open throughout the college year to all students of the University, and are regularly used by all departments except the Department of Law. They are also open to any person who wishes to pursue special studies therein, provided he complies with the conditions for admission to that department of the University to which the desired special studies properly belong.

Three hundred and eighty students are engaged in these laboratories at the same time, each at a table provided for one worker. During the year, from 600 to 800 students complete from one to four courses of study each in the various branches of chemistry. The students engage in chemical work as it is needful for their different purposes,—the pursuit of science, or the preparation for teaching, for the several professions applying chemistry, and for the various chemical arts and industries.

GEOLOGICAL AND ZOÖLOGICAL LABORATORIES.

Opportunity for practical work in geology and zoölogy is provided in rooms set apart for this use in the museum building. The rooms are furnished with microscopes, photographic instruments, cutting and polishing lathes, and other apparatus for the preparation of specimens. Special encouragement and assistance are given to students wishing to carry on original investigations.

BOTANICAL LABORATORY.

In the botanical laboratory instruction is given in the practical study of the structure and physiology of plants, and opportunity is offered to advanced students for the study of vegetable pathology and other special subjects. The laboratory is provided with microscopes, microtomes, microchemical reagents, and a fair outfit for physiological experiments. The equipment has been recently increased by the addition of aquaria, Wardian cases, and a number of Zeiss microscopes with the best objectives. The library includes the leading French, German, and English botanical periodicals.

Students in the elementary courses have constant personal assistance and direction from the instructors. The advanced courses require more independent work, and, as far as possible, every facility will be provided those who have shown themselves capable of carrying on the work of research.

LABORATORY OF ANIMAL MORPHOLOGY.

The laboratory of animal morphology consists of nine rooms, with about 4,000 square feet of floor space, and is lighted by twenty-nine windows. There is a large room for the elementary work of students, and a smaller room for more advanced work in vertebrate morphology. These two rooms accommodate about fifty students at one time. There is a room for the housing of small mammals, a room for the storage of alcoholic material, and a room in which a reference library is shelved. The professor in charge has a private room; and three smaller rooms, each accommodating one person, are used by the instructors and by students engaged in investigation. The rooms are provided with water and gas, and are fitted with tables specially designed for the work.

Suitable provision has been made for the study of animals inhabiting the neighboring waters. There are four aquaria (the largest seven feet long), and there are arrangements for maintaining thirty smaller aquaria for the rearing of embryos and the study of isolated forms.

There is a good equipment of microscopes, including a Zeiss microscope with apochromatic lenses, and of microtomes and accessory apparatus. For illustrative purposes, there is a collection of alcoholic specimens (many of them from the Naples Zoölogical Station), a set of Leuckart

and Nitsche's wall charts, of Ziegler's wax models, and a small collection of Blaschka's glass models.

ENGINEERING LABORATORY.

The engineering laboratory contains about 20,000 square feet of floor space, distributed in the rooms described below.

The mechanical laboratory, 40 by 80 feet, is devoted to experimental work in connection with the testing of engines, boilers, pumps, injectors, belting, toothed and friction gearing, lubricants, and strength of materials, and to such original work as can be undertaken with advantage. The work also extends to the testing of engines, boilers, and water-wheels of neighboring mills and electric plants. The Knowles and the Gordon compound duplex pumping-engines at the city water-works have been fitted up by the company with especial reference to the convenience of engineering students in making tests. Among the more recent additions to the equipment are a 100,000-pound Olsen testing machine; a Thurston and an Ashcroft oil-testing machine; a Stirling boiler for high pressures; a portable Wainwright surface condenser; an Alden absorption dynamometer; an Emerson power-scale; a large, electrically driven, chronograph, built in the laboratory; a 36-foot open mercury column; special apparatus for testing pressure- and vacuum-gauges and indicator springs; gauges; indicators; thermometers; pyrometers; pumps and injectors; water-meters; and a special universal water-motor, built in the laboratory, together with pressure-tank and pumps for testing commercial motors.

The iron room, or machine shop, and the wood room and pattern shop, each 40 by 80 feet, contain the tools and apparatus usually found in first-class establishments. The wood room contains benches for twenty-four students. The pattern loft, 40 by 80 feet, contains a fine collection of patterns made by students.

The forge shop, 30 by 40 feet, is fitted with twelve forges, built in the laboratory. The blast is supplied by a No. 4 Sturtevant pressure blower, and the smoke is carried away by a No. 31 exhaust fan.

The foundry, 30 by 40 feet, contains an 18-inch cupola, brass furnaces, and a core-oven, and is supplied with a blast by a No. 3 Sturtevant pressure blower.

The central wing is 32 by 54 feet. The first floor contains a well-ventilated wash room with closets and other conveniences; an engine room with a 50 H-P Reynolds-Corliss engine; and superintendent's office. The second floor contains a large, well-lighted drawing room, and a blue-print room. The basement and attic are devoted to storage purposes.

The tower, at an elevation of seventy-five feet, contains a water tank, of 100 barrels capacity, for experimental work in hydraulics.

New machinery is added to each shop from time to time, so that engineering students and others desiring instruction and practice in the use of

tools for working in wood and metal may be properly accommodated, and at the same time have opportunity to become familiar with the more common materials and forms of construction used in engineering structures, buildings, and machinery. In all shop work an effort is made to follow the practice of the best shops. Several of the machines in use were designed and built by the students themselves.

The instruction in shop work is given by men of wide practical experience, selected for their mechanical skill.

THE HOSPITALS.

The facilities for clinical instruction in the two medical schools connected with the University have been largely increased by the completion of the new hospital buildings, for which the State legislature and the city of Ann Arbor together appropriated the sum of \$75,000. The University Hospital is under the direction of the Faculty of the Department of Medicine and Surgery; the Homœopathic Hospital is connected with the Homœopathic Medical College. Further information in regard to the hospitals is given in connection with the descriptions of the medical schools.

FEES AND EXPENSES.

Matriculation Fee.—Every student before entering any department of the University is required to pay a matriculation fee. This fee, which, for citizens of Michigan, is ten dollars, and, for those who come from any other State or country, twenty-five dollars, is paid but once, and entitles the student to the privileges of permanent membership in the University.

Annual Fee.—In addition to the matriculation fee, every student has to pay an annual fee for incidental expenses. This fee is paid the first year of residence at the University, and every year of residence thereafter. Resident graduates are required to pay the same annual fee as undergraduates. The annual fee in the several departments of the University is as follows:

Department of Literature, Science, and the Arts: for Michigan students, twenty dollars; for all others, thirty dollars.

Department of Medicine and Surgery: for Michigan students, twenty-five dollars; for all others, thirty-five dollars.

Department of Law: for Michigan students, twenty-five dollars; for all others, thirty-five dollars.

School of Pharmacy: for Michigan students, twenty-five dollars; for all others, thirty-five dollars.

Homœopathic Medical College: for Michigan students, twenty-five dollars; for all others, thirty-five dollars.

College of Dental Surgery; for Michigan students, twenty-five dollars; for all others, thirty-five dollars.

The matriculation fee and the annual fee must be paid at the beginning of the college year. A by-law of the Board of Regents provides that no student or graduate shall be allowed to enjoy the privileges of the University until he has paid all fees that are due.

Laboratory Expenses.—Students who pursue laboratory courses of study are required to pay for the materials and apparatus actually consumed by them. The deposits required in advance are different for the different courses, ranging from one to twenty dollars. The laboratory expenses of students will vary with their prudence and economy. Experience has shown that in the chemical laboratory the average expense for all courses is about one dollar and twenty cents a week.

Diploma Fee.—The fee for the diploma given on graduation is ten dollars, and the by-laws of the Board of Regents prescribe that no person shall be recommended for a degree until he has paid all dues, including the fee for diploma.

Other Expenses.—Students obtain board and lodging in private families for from three to five dollars a week. Clubs are also formed in which the cost of board is from one dollar and a half to two dollars and a half a week. Room rent varies from seventy-five cents to two dollars a week for each student. The annual expenses of students, including clothing and incidentals, are, on the average, about three hundred and seventy dollars. The University does not undertake to furnish manual labor to students; yet a few find opportunities in the city for remunerative labor.

There are no dormitories and no commons connected with the University. Students on arriving in Ann Arbor can obtain information in regard to rooms and board by calling at the Steward's office.

RELATION OF STUDENTS TO THE CIVIL AUTHORITIES.

Students are temporary residents of the city, and, like all other residents, are amenable to the laws. If guilty of disorder or crime, they are liable to arrest, fine, and imprisonment. A rule of the University Senate provides that if a student is arrested, or is convicted by the civil authorities, he shall be cited to appear before the Faculty of the department in which he is matriculated, and shall be liable to suspension or expulsion.

AIDS TO MORAL AND RELIGIOUS CULTURE.

Religious exercises are held regularly in the University Chapel, at which attendance is voluntary.

The Students' Christian Association, which has a large membership,

holds stated meetings, either for religious or social improvement. Through the enterprising efforts of the Association and the benevolence of those interested in its aims, a spacious and beautiful building, called Newberry Hall, has been erected for its use adjacent to the University Campus.

* The churches of the city of Ann Arbor are cordially thrown open to the students, whose interests are largely consulted by the pastors in their pulpit instruction and in their plans of work. There are churches of the following communions in the city: Baptist, Congregationalist, the Disciples, German Lutheran, German Methodist, Methodist Episcopal, Presbyterian, Protestant Episcopal, Roman Catholic, and Unitarian.

Guilds, or other societies, consisting chiefly of students, have been organized in several of the churches both for religious and moral culture and for social entertainment. The Hobart Guild, connected with St. Andrew's Church (Protestant Episcopal), has a commodious building, called Harris Hall (formerly known as Hobart Hall), planned and equipped for all the objects of the Guild; and two of the several lectureships contemplated in its plans have been endowed, the Baldwin Lectures for the Establishment and Defence of Christian Truth, and the Charlotte Wood Slocum Lectureship on Christian Evidences. The Tappan Presbyterian Association now occupies its new building, known as McMillan Hall; it owns a theological library of several thousand volumes, and maintains annual courses of lectures upon church history and church work. The Methodist Episcopal church has organized the Wesleyan Guild, and has made the beginning of a permanent fund for the support of a special lectureship. Unity Club is a society formed by the Unitarian church with similar purposes. The Foley Guild is an organization of Roman Catholic students under the patronage of the Rt. Reverend John S. Foley, bishop of the diocese. The society organized in connection with the Church of the Disciples is called the Inland League.

UNIVERSITY ORGANIZATIONS.

The Students' Lecture Association provides each year, at a low price for admission, an attractive series of lectures and musical entertainments.

The Choral Union is an organization of students and others, for the study and practice of choral music under the direction of the Professor of Music in the University, and for the promotion of general musical culture. Under its auspices, and with the coöperation of the University Musical Society,* the following course of concerts is announced for the year 1892-93:

*The University Musical Society is a body corporate under the laws of the State of Michigan; it has no organic connection with the University, though its membership is restricted to past and present University officers and students. The Society has recently established a School of Music in Ann Arbor, in which systematic instruction is given in vocal and instrumental music, such as the University cannot undertake to provide.

- I. Theodore Thomas's Chicago Symphony Orchestra.
- II. Handel's Oratorio of the Messiah.
- III. Piano Recital.
- IV. Song Recital.
- V. Boston Symphony Orchestra.
- VI. Mendelssohn's Oratorio of Elijah.

The students in the Department of Law arrange annually for a celebration of Washington's birthday. The address in 1892 was given by President Grover Cleveland.

There are several organizations, composed of University officers and students, whose chief objects are the reading of papers and the holding of conferences on topics of interest that do not fall within the scope of ordinary class-room work; but some of them also aim to secure each year speakers of prominence to give public addresses on subjects germane to the purpose of the Society. Among these organizations the following may be mentioned: the Engineering Society; the Geological Society; the Chemical Society; the Philosophical Society; the Philological Society; the Mathematical Club; and the Political Science Association.

The Oratorical Association was organized by students under the guidance of the Professor of Elocution and Oratory, to foster an interest in oratory, and also to take part in the contests of the Northern Oratorical League, which includes student organizations in five leading western institutions. At the annual contests of the Association, the students who take the first and the second rank receive testimonials of seventy-five and fifty dollars respectively, and are designated to represent the University in the annual contests of the League.

Department of Literature, Science, and the Arts.

THE Department of Literature, Science, and the Arts owes its name to a provision in the legislative act under which the University was organized in the year 1837. It provides for collegiate and technological lines of university work, as distinguished from the work of the professional schools in medicine, law, pharmacy, and dentistry. The courses of instruction are arranged to meet the wants not only of such as are fitted to take up a systematic course of study in the classics, or in science, but also for those whose preparatory studies have not included any ancient or foreign languages. Special students, who wish to pursue miscellaneous studies, are admitted on conditions stated on page 40.

The Graduate School established last year in connection with this department is under the direction of an Administrative Council, appointed from the Faculty of the department.

The academic year extends from the first day of October to the Thursday following the last Wednesday in June.

ADMISSION OF UNDERGRADUATES.

Candidates for admission must be at least sixteen years of age, and must present satisfactory evidence of good moral character. They must bring credentials from their last instructor, or from the last institution with which they have been connected.

Unless admitted on diploma from an approved school (see page 41), any student who desires to become a candidate for a degree must pass examinations in some one of the groups of subjects described below; the group being determined by the character of the work he intends to pursue, and the degree he desires to take. Before entering upon the examination each candidate must present his credentials to the President at his office.

For admission to advanced standing, see page 39.

For admission of students not candidates for a degree, see page 40.

THE DEGREE OF BACHELOR OF ARTS.

Candidates for admission to the course leading to the degree of Bachelor of Arts will be examined in the following subjects:—

1. **English Language, Composition, and Rhetoric.**—The examination will be as follows;

a. A grammatical and rhetorical analysis of short selections in prose and poetry. The rhetorical analysis will be confined chiefly to the meanings and forms of words, sentential structure, paragraphing, and figures of speech.

b. An essay of not less than two pages (foolscap), correct in spelling, punctuation, capital letters, grammar, sentential structure, and paragraphing. The subjects for 1893 will be taken from the following works, with the substance of which—the plots, incidents, characters, etc.—it is expected that the student will, by careful reading, thoroughly familiarize himself; Shakespeare's *Macbeth*, Scott's *Talisman*, Wordsworth's *White Doe of Rylstone*, Dickens's *Nicholas Nickleby*, and George Eliot's *Mill on the Floss*. The subjects for 1894 will be taken from Shakespeare's *Julius Caesar*, Addison's *Sir Roger de Coverly* (from the *Spectator*), Hughes's *Tom Brown at Rugby*, Scott's *Marmion*, Johnson's *Rasselas*, Dickens's *Oliver Twist*. Equivalents of these will be accepted.

For securing the proper preparation, the following course is recommended: (1) A few lessons and constant practice in the proper use of the *Unabridged Dictionaries*. (2) A review of the elements of English Grammar during the last year of the preparatory course. (3) Daily recitations for at least one term in some such work as D. J. Hill's *Elements of Rhetoric and Composition*, or A. S. Hill's *Principles of Rhetoric*. (4) A careful reading of one of Shakespeare's plays, in an annotated edition, as Hudson's, Rolfe's, Meiklejohn's, or one of the Clarendon Press series. (5) Weekly exercises in original composition, for at least two years.

(6) Scott and Denney's Paragraph Writing will be found a useful guide in that subject.

2. History.—Myers's General History (or, in its stead, that portion of Myers's History of the Eastern Nations that treats of Greece, together with Allen's or Leighton's History of Rome); and the History of the United States as far as the close of the Revolutionary War.

3. Mathematics.—*Algebra.*—Fundamental Rules, Fractions, Simple Equations, Involution and Evolution, the Calculus of Radicals, and Quadratic Equations, as given in Olney's Complete School Algebra, or an equivalent in other authors.

Geometry.—Plane, Solid, and Spherical Geometry, as given in Olney's New Elementary Geometry, or an equivalent in other authors.

N. B.—It is very desirable that High Schools whose graduates are received on diploma arrange their courses so as to include a portion of both Algebra and Geometry in their last preparatory year; and it is equally important that other students should do the same if they expect to succeed in the study of mathematics in the University.

4. Physics.—An amount represented by Carhart and Chute's Elements of Physics. Laboratory work in Physics is urgently advised, but is not required.

5. Botany.—Practical exercises in the study of common plants, so conducted as to secure a familiar acquaintance with the essential facts of vegetable morphology, physiology, and relationship.

The examination will include,—

a. Description of indigenous species, by which the candidate's knowledge of organography and his facility in the use of the descriptive language of the science are tested.

b. Classification, including particularly the recognition at sight of important natural orders and larger groups, with a practical knowledge of their botanical characters.

c. An account of physiological adaptations. The student is expected to know, from personal observation, something of the relations of flowers and insects, the dissemination of seeds, protective arrangements, and related subjects.

The limited time usually given to Botany in the preparatory schools, often with insufficient material, renders it specially desirable that all who expect to continue this subject in the University should give some additional time to it during the summer vacations, when plants are easily procured, and there is better opportunity for independent observation.

6. Latin.—*Grammar.*—A thorough preparation in the elements of Etymology, Syntax, and Prosody.

Prose Composition.—Candidates will be asked to translate into Latin a passage of connected English narrative, based upon some portion of the Caesar or Cicero read. As a text-book, Jones's, Collar's, or Daniell's is recommended.

Reading.—Four books of Caesar's Gallic War; six select orations of Cicero; and nine books of Virgil's Æneid. For books 7–9 of the Æneid, all of the Eclogues, or 1,500 lines of Ovid, may be substituted.

Four years, if possible, should be given to the preparatory work in Latin outlined above. Special care should be taken with the training in Prose Composition. It is hoped that many schools will continue, as heretofore, to prepare students in the whole of the *Æneid*, or an equivalent. Students entering with this preparation will receive a certain amount of credit toward graduation.

The Roman method of pronouncing Latin is used at the University.

7. Greek.—*Grammar.*—Goodwin's or Hadley's. The inflections must be thoroughly mastered.

Prose Composition.—Jones's Exercises, with special reference to the writing of Greek with the accents, and to the general principles of syntax. Woodruff's Greek Prose Composition is taken as an equivalent.

Reading.—Three books of Xenophon's *Anabasis*.

The so-called continental sound of the vowels and diphthongs, and pronunciation according to the written accent, are preferred. In preparation, Boise's First Lessons in Greek, or White's Beginner's Greek Book, will be found valuable.

Two full years of daily recitation ought to be given to preparation in Greek.

THE DEGREE OF BACHELOR OF PHILOSOPHY.

Candidates for admission to the course leading to the degree of Bachelor of Philosophy will be examined in all the subjects required for the admission of candidates for the degree of Bachelor of Arts, excepting what is required in Greek and in Grecian History (see page 34), and also in French or in German, the same as for the degree of Bachelor of Science (see below).

THE DEGREE OF BACHELOR OF SCIENCE.

Two groups of requirements for admission of candidates to the courses leading to the degree of Bachelor of Science are given below:—the first for students who intend to complete the requirements for graduation in General Science, in Chemistry, or in Biology, as given on subsequent pages; the second for students who intend to pursue courses in Civil, Mechanical, Mining, or Electrical Engineering.

I. THE COURSE IN GENERAL SCIENCE, IN CHEMISTRY, OR IN BIOLOGY.

Candidates for admission will be examined in the following subjects:

1. English Language and Mathematics.—In both, the same as for the degree of Bachelor of Arts (see pages 34, 35).

2. History.—Myers's General History, or an equivalent; and the History of the United States as far as the close of the Revolutionary War.

3. French, German, and Latin.—Candidates may offer either French

and German, French and Latin, or German and Latin, two of these three languages being required. The requirements in each are as follows ;

French.—The whole subject of French Grammar. The candidate will be expected to read at sight easy French, and to translate correctly into French simple English sentences. Two years ought to be given to this study, the first year being spent on the grammar, and the second devoted to reading good modern French, accompanied by grammatical analysis and exercises in writing. The texts read should be chiefly narrative and conversational prose ; modern, rather than classic, dramas should be read.

German.—(1) Ability to pronounce German correctly and to read it fluently with the proper intonations. (2) Thorough familiarity with the every-day facts of the grammar, to be evinced by putting illustrative English phrases and sentences into German. (3) Sufficient miscellaneous prose reading—say four hundred pages—so that the candidate will be able to construe at sight, and put into good English, a passage of moderately difficult German prose, either narrative or dialogue. (4) A careful study of one classical drama, Schillers's *Tell* being recommended. A full description of what the University regards as the best preparatory course in German, with suggestions as to text-books, methods, etc., was published in No. 3, of vol. II., of the *University Record*, which will be sent on application.

Latin.—Jones's First Latin Book, or an equivalent amount in any other introductory text-book ; four books of Caesar's Gallic War, and one of the orations of Cicero. It is expected that at least two years will be given to preparation in Latin.

4. Physics and Botany.—In both, the same as for the degree of Bachelor of Arts (see page 35).

5. Chemistry, Geology, Zoölogy, Physiology, Physical Geography, and Astronomy.—The candidate may offer any *two* of these subjects. The requirements, intended to cover a half-year's work in each subject, are as follows :

Chemistry.—Remsen's Briefer Course, or an equivalent.

Geology.—Winchell's Geological Studies.

Zoölogy.—Packard's Zoölogy, or Nicholson's Manual of Zoölogy.

Physiology.—Martin's The Human Body.

Physical Geography.—Hinman's Eclectic Physical Geography, or an equivalent.

Astronomy.—Newcomb and Holden's Astronomy, school edition, Young's Elements of Astronomy, or an equivalent. A knowledge of the principal constellations is required.

II. THE COURSES IN ENGINEERING.

Candidates for admission will be examined in the following subjects :

1. **English Language.**—The same as for the degree of Bachelor of Arts (see page 34).

2. **Mathematics.**—*Algebra and Geometry.*—The same as for the degree of Bachelor of Arts (see page 35).

Trigonometry.—Plane Trigonometry as given in Olney's Elements of Trigonometry, or an equivalent in other authors. A candidate who has had no opportunity for preparation in Trigonometry may be admitted, if satisfactory examinations are passed in the other subjects, but he will be required to make up the deficiency by extra work in the University classes in that subject.

3. **History.**—The same as for the course in General Science (see page 36).

4. **Physics.**—The same as for the degree of Bachelor of Arts (see page 35).

5. **English Literature.**—The same as for the degree of Bachelor of Letters (see below).

6. **Chemistry, Geology, Zoölogy, Physiology, Physical Geography, and Astronomy.**—In any *two* of these subjects (see page 37).

Additional Requirement in 1895 and thereafter.

7. **French, German, and Latin.**—In 1895 and thereafter candidates will be examined in *one* of the three languages, French, German, or Latin, the extent of the requirement in each case being the same as for the course in General Science (see page 36).

THE DEGREE OF BACHELOR OF LETTERS.

Candidates for admission to the course leading to the degree of Bachelor of Letters will be examined in the following subjects:

1. **English Language.**—The same as for the degree of Bachelor of Arts (see page 34). Inasmuch as no foreign language is required in preparation for this course, it will be necessary, in order to secure a corresponding grade of attainments, to give more time to the study of the English language than is required in preparation for the other courses. It is expected that the preparatory schools will devote at least two years of daily recitation to word-analysis, sentence-analysis, composition, and the elements of Rhetoric.

2. **English Literature.**—Daily recitations for at least one year will be requisite. Stopford A. Brooke's Primer, or any other manual, may be used for an outline of the subject. As much time as practicable should be given to the careful reading of representative authors in each period.

3. **Mathematics.**—The same as for the degree of Bachelor of Arts (see page 35).

4. **Physics and Botany.**—In both, the same as for the degree of Bachelor of Arts (see page 35).

5. **Chemistry, Geology, Zoölogy, Physiology, Physical Geography, and Astronomy.**—In any *three* of these subjects, the same as for the degree of Bachelor of Science (see page 37).

6. **History.**—Myers's General History, or an equivalent, Johnston's History of the United States, and Ransome's History of England.

7. **Civil Government.**—Fiske's Civil Government, Hinsdale's American Government (Parts I and II, especially the large print), or an equivalent.

8. **French, German, and Latin.**—In place of the *English History* and the *three optional sciences* specified above, the candidate for admission may present *French, German, or Latin*, in amount equal to that exacted of candidates for the degree of Bachelor of Science (see page 36). This means about two years' study in some one of these three languages.

With respect to the option here allowed, it may be observed that inasmuch as a large part of the work required in the University for the degree of Bachelor of Letters consists of French and German, students who intend to take this degree will find it advantageous to begin at least one of these languages in their preparatory course.

ADMISSION TO ADVANCED STANDING.

1. Candidates for advanced standing who do not come from some other university or college will be examined in the studies prescribed for admission, and also in such undergraduate studies as they may ask to be credited with in advance. The examination for advanced standing, however, may be waived in the case of studies pursued in a graduate course by graduates of a diploma school, provided the work of such graduate course has been inspected and approved by the Faculty.

2. Students who have completed at least one year's college work in an approved college, and who bring explicit and official certificates describing their course of study and scholarship, and testifying to their good character, will be admitted without examination, except such as may be necessary in order to determine what credit they are to receive for work done in the college from which they have come, and what courses of study they may profitably pursue here. Students coming from colleges whose requirements for admission are substantially equivalent to those of this department of the

University may thus expect to be able to go on with their work without loss of standing.

3. All students who wish to obtain advance credit for work completed prior to admission to this department, should make application to the President at the time of matriculation, and must secure such credit within one-half year from the date of matriculation. Blank forms for this purpose are provided by the Registrar. After a student's credit has once been adjusted on this account, it cannot be reopened without special permission of the Faculty.

ADMISSION OF STUDENTS NOT CANDIDATES FOR A DEGREE.

Persons who desire to pursue studies in this department, and do not desire to become candidates for a degree, will be admitted on the following conditions:

1. All persons under twenty-one years of age must pass the entrance examinations required of candidates for some degree, as described on pages 34 to 39.

2. Persons over twenty-one years of age must show that they have a good knowledge of English and are otherwise prepared to pursue profitably the studies they may desire to take up.

3. Should a student who enters under the preceding provision (2) subsequently become a candidate for graduation, he must pass all the examinations for admission required of such a candidate, at least one year previous to the time when he proposes to graduate; and in case he wishes to obtain credit for any work completed prior to his admission to this department, he must make previous application to the President and secure his credit at the time of passing his admission examinations.

TIMES OF EXAMINATIONS.

An examination for admission to the Department of Literature, Science, and the Arts, will be held on Saturday and Monday, June 24 and 26, 1893; and another beginning on Monday, September 25, and continuing through the Tues-

day, Wednesday, Thursday, and Friday following. The examinations will begin at nine o'clock A. M. of each day. Candidates may take their examinations at either of these times, or may take a part in June, and a part in September. In either case it is particularly desired that they present themselves on the first day of the examination.

At the June examination the subjects for Saturday will be : Mathematics, Greek, Latin, French, German, Botany, Zoölogy, Physiology, Astronomy, Physical Geography, Geology. For Monday : Latin Prose Composition, English, English Literature, History and Civil Government, Physics, Chemistry.

In September the examinations will be conducted in accordance with the following scheme :

	MONDAY.		TUESDAY.		WEDNESDAY.		THURSDAY.		FRIDAY.	
	A. M.	P. M.	A. M.	P. M.	A. M.	P. M.	A. M.	P. M.	A. M.	P. M.
Mathematics.....	9 00	2 00	9 00	2 00	-----	-----	9 00	2 00	9 00	-----
Greek	9 00	2 00	9 00	2 00	9 00	2 00	-----	-----	9 00	-----
Latin.....	9 00	3 00	9 00	3 00	-----	-----	9 00	3 00	9 00	-----
Latin Prose Compo- sition	-----	2 00	-----	-----	-----	-----	-----	2 00	-----	-----
English Language.....	-----	4 00	-----	4 00	-----	4 00	-----	-----	-----	-----
English Literature.....	-----	-----	-----	3 00	-----	-----	-----	-----	-----	-----
History and Civil Government.....	-----	-----	-----	-----	9 00	2 00	-----	-----	-----	-----
French	-----	-----	-----	2 00	10 00	2 00	-----	2 00	-----	-----
German.....	9 00	2 00	-----	-----	9 00	2 00	9 00	-----	-----	-----
Botany	-----	-----	9 00	-----	-----	-----	-----	-----	9 00	-----
Zoology and Physi- ology	-----	-----	-----	-----	10 00	-----	-----	-----	-----	-----
Geology	-----	-----	-----	-----	-----	-----	-----	4 00	-----	-----
Astronomy and Phy- sical Geography.....	-----	-----	-----	-----	-----	-----	-----	-----	10 00	-----
Physics	-----	-----	11 00	-----	11 00	-----	-----	-----	-----	-----
Chemistry	-----	-----	-----	-----	-----	-----	11 00	-----	-----	-----

Examinations for admission will also be held at Chicago, and possibly at some other western cities, on Tuesday and Wednesday, June 27 and 28, 1893. The places and the hours will be announced in the newspapers of those cities.

ADMISSION ON DIPLOMA.

The privilege of sending pupils for admission on diploma, originally limited to approved schools in Michigan, is now extended to include schools in other States.

On request of the school board in charge of any school, the Faculty will designate a committee to visit the school and report upon its condition. Usually the committee will consist of members of the Faculty; but whenever, owing to the great distance of a school from Ann Arbor, or for any other reason, this is impracticable, other persons may be designated to perform, under the direction of the Faculty, the work of inspection.

If the Faculty are satisfied from the report of their committee that the school is taught by competent instructors, and is furnishing a good preparation to meet the requirements for admission of candidates for any one or more of our degrees, then the graduates from *the approved preparatory course or courses* will be admitted without further examination, and permitted to enter upon such undergraduate work as the preparatory studies contemplated. They must present to the President, within a year and three months after their graduation, the diplomas of their school board. They must also present certificates from the school superintendent or principal, stating that they have sustained their examinations in all the studies prescribed for admission as candidates for some one of our degrees, and are recommended for admission to the University. They will be required to appear at once in their places; otherwise they can be admitted only upon examination.

The schools which shall be approved shall be entitled to send their graduates on diploma for a period of three years (inclusive of the year of visitation) without further inspection, provided that the Faculty are satisfied that within this period no important changes affecting the course of study and the efficiency of the instruction make another inspection necessary. Otherwise, the Faculty reserve the right to require another inspection if the relation between the school and the University is to be maintained. Should the authorities of any school at any time within this period desire that a committee of inspection visit their school, the Faculty will always grant such a request if practicable.

The superintendent of each approved school is expected to send to the President, annually, at a date not later in the year than March first, a catalogue of the school ; or, if no catalogue is published, he is expected to send a statement, giving the names of the teachers, the number of pupils, and a description of the courses of study.

A circular giving fuller details on this subject can be obtained on application to the President.

The schools named below have been approved by the Faculty as qualified to prepare students for admission on diploma for the courses specified. The third column gives the year in which the term of approval expires. Unless otherwise indicated, the places named are in Michigan, and the school approved is the public high school of the locality.

Adrian,	Ph.B., B.S., B.L.	1894
Albion,	B.L.	1892
Allegan,	Ph.B., B.S., B.L.	1892
Alpena,	Ph.B., B.S., B.L.	1892
Ann Arbor,	All Courses.	1892
Aurora, Ill.: East Side,	Ph.B.	1892
Austin, Ill.,	Ph.B., B.S., B.L.	1893
Battle Creek,	All Courses.	1892
Bay City,	All Courses.	1892
Benton Harbor Normal and Collegiate Institute,	All Courses.	1892
Big Rapids,	Ph.B., B.S., B.L.	1892
Birmingham,	B.S., B.L.	1892
Buchanan,	B.L.	1892
Cadillac,	Ph.B., B.L.	1894
Canandaigua, N. Y.: Granger Place School,	A.B.	1894
Caro,	B.L.	1892
Cassopolis,	Ph.B., B.S., B.L.	1892
Cedar Rapids, Ia.,	Ph.B., B.S., B.L.	1894
Champion,	B.S., B.L.	1893
Charlotte,	All Courses.	1892
Chicago, Ill.: North Division,	All Courses.	1893
Northwest Division,	All Courses.	1893
South Division,	All Courses.	1893
West Division,	All Courses.	1893
Harvard School,	All Courses.	1892

Jefferson High School,	All Courses.	1893
Manual Training School,	B.S. (Engineering).	1894
University School,	All Courses.	1892
Coldwater,	All Courses.	1894
Corunna,	B.L.	1892
Decatur, Ill.,	A.B., Ph.B.	1892
Decatur, Ill.,	B.S., B.L.	1894
Denver, Colo.,	All Courses.	1893
Detroit,	All Courses.	1892
Detroit: Detroit School for Boys,	All Courses.	1892
Eaton Rapids,	B. S., B.L.	1893
Englewood, Ill.,	Ph.B., B.S., B.L.	1893
Fenton,	Ph.B., B.S., B.L.	1894
Flint,	All Courses.	1894
Grand Haven,	Ph.B., B.S. B.L.	1894
Grand Rapids,	All Courses.	1892
Greenville,	All Courses.	1894
Hancock,	B.S., B.L.	1893
Hastings,	B.S., B.L.	1893
Helena, Mon.,	B.L.	1893
Hillsdale,	B.S., B.L.	1893
Holly,	B.S., B.L.	1892
Houghton,	B.S., B.L.	1893
Howell,	Ph.B., B.S., B.L.	1892
Hyde Park, Ill.,	All Courses.	1893
Ionia,	All Courses.	1892
Ishpeming,	Ph.B., B.S., B.L.	1893
Ithaca,	B.S., B.L.	1893
Jackson: East Side,	B.S., B.L.	1892
West Side,	All Courses.	1892
Joliet, Ill.,	All Courses.	1894
Kalamazoo,	All Courses.	1894
Kalamazoo: Michigan Female Seminary,	Ph.B., B.L.	1892
Kansas City, Mo.,	All Courses.	1892
Kenwood, Ill.: Kenwood Institute,	Ph.B., B.S., B.L.	1894
Kewanee, Ill.,	All Courses.	1892
La Grange, Ill. (Lyons township),	All Courses.	1893
Lake, Ill.,	All Courses.	1893
Lake Linden,	B.S., B.L.	1894
Lake View, Ill.,	All Courses.	1893
Lansing,	Ph.B., B.S., B.L.	1893
Lapeer,	Ph.B., B.S., B.L.	1892
La Porte, Ind.,	Ph.B., B.S., B.L.	1893

Leavenworth, Kan.,	All Courses.	1893
Lima, Ind.: Howe Grammar School,	A.B., B.S.	1893
Ludington,	B.S.	1892
Manistee,	All Courses.	1892
Marine City,	B.S., B.L.	1892
Marquette,	All Courses.	1894
Marshall,	All Courses.	1893
Michigan City, Ind.,	All Courses.	1892
Milwaukee, Wis.,	All Courses.	1893
Minneapolis, Minn.,	All Courses.	1894
Monroe,	All Courses.	1894
Mt. Clemens,	Ph.B., B.S., B.L.	1893
Muskegon,	All Courses.	1892
Nashville, Tenn.: Peabody Normal College,	A.B.	1894
Niles,	Ph.B., B.S., B.L.	1892
Normal, Ill.: Normal University Academic Department.	A.B., Ph.B.	1892
Oak Park, Ill.,	All Courses.	1893
Orchard Lake: Michigan Military Acad.,	All Courses.	1892
Ottawa, Ill.,	All Courses.	1892
Owosso,	Ph.B., B.S., B.L.	1892
Paw Paw,	All Courses.	1893
Peoria, Ill.,	All Courses.	1894
Pontiac,	All Courses.	1894
Port Huron,	All Courses.	1892
Raisin Valley Seminary,	B.S., B.L.	1892
Rockford, Ill.,	All Courses.	1894
Romeo,	All Courses.	1893
Saginaw: East Side,	All Courses.	1893
West Side,	All Courses.	1894
St. Clair,	Ph.B., B.S., B.L.	1892
St. Johns,	Ph.B., B.S., B.L.	1892
St. Joseph,	Ph.B., B.S., B.L.	1892
St. Paul, Minn.,	All Courses.	1892
Saxton's River, Vt.: Vermont Academy,	All Courses.	1892
South Bend, Ind.,	Ph.B., B.S., B.L.	1894
Springfield, Ill.,	All Courses.	1892
Sturgis,	B.S., B.L.	1892
Toledo, O.,	B.S., B.L.	1894
Traverse City,	Ph., B.S., B.L.	1894
Union City,	B.S., B.L.	1892
Vassar,	B.S.	1892

Vassar,	B.L.	1894
West Bay City,	Ph.B., B.S., B.L.	1894
Ypsilanti,	All Courses.	1892

Total, 110 Schools.

COURSES OF INSTRUCTION.

From the Courses of study offered in the various branches of learning, the student is allowed to make his choice, subject to the regulations prescribed by the Faculty. The Courses offered are subject to change from year to year. Full particulars concerning the Courses are given to students in a special Announcement at the opening of each academic year.

The Courses offered for the year 1892-93 are described in the following pages. For convenience of reference, a few Courses are here included that are not ordinarily open to undergraduates.

For explanation of the terms *one hour credit, two hours credit*, etc., see Requirements for Graduation, page 93.

GREEK.*

All students, except those who are admitted to advanced standing, are required to pursue Course I before passing on to the other Courses. The Teachers' Seminary is open only to those who have completed Courses 1, 2, 3, 4, either 5*a* or 5*b*, and two hours of elective work. Courses 12, 13*a*, 13*b*, and 13*c*, are primarily for graduate students. Courses 6*a*, 6*b*, 7*a*, 7*b*, 8, 9, 11*a*, 11*b*, 16, 17, and 19 are advanced electives for undergraduates, but may be taken with advantage by graduates.

FIRST SEMESTER.

1. Lysias; Xenophon's Symposium. *Th, W, Th, F.* Sec. I, at 10½; Professor PATTENGILL. Sec. II, at 10½; Assistant Professor BELSER. Sec. III, at 9½; Mr. DE COU.

*School of Classical Studies at Athens.—This University, through the generosity of some of its friends, is a contributor to the support of the American School of Classical Studies at Athens. The School affords facilities for archæological and classical investigation and study in Greece, and graduates of the Department of Literature, Science, and the Arts of this University are entitled to all its advantages without expense for tuition. Professor M. L. D'Ooge was director of the School for 1886-87.

4. Demosthenes, *De Corona*; Studies in the Attic Orators. *M, Tu, W, Th.* Sec. I, at 11½; Professor PATTENGILL. Sec. II, at 10½; Mr. DE COU.
 - 6a. Teachers' Seminary. Lectures on Greek Grammar. *M, F,* at 11½. Professor D'OUGE.
 - 7a. Seminary in Tragedy. Aeschylus, Prometheus; Sophocles, Oedipus at Colonus; Euripides, *Ion.* *M, 2-4.* *Two hours credit.* Professor D'OUGE.
- Course 7a must be preceded by Course 5a or 5b.
8. History of Greek Art from the beginnings to the Roman period. Von Reber's *History of Ancient Art* and Collignon's *Manual of Greek Archæology* are made the basis of a more general study. *Tu, W, F,* at 3. Professor D'OUGE.
 - 11a. Hellenistic Greek. Historical Development. Selections from Arrian, Plutarch, Philo, Josephus, and the Septuagint, with special reference to lexical and syntactical peculiarities. *Tu, W, F,* at 3. Assistant Professor BELSER.
 12. Seminary in Plato's Republic. *W, F,* at 4. Professor D'OUGE.
Course 12 is open only to graduates and to advanced students.
 - 13a. Graduate Seminary. Introduction to Greek Epigraphy and Reading of Inscriptions. *Th, 2-4.* *Two hours credit.* Professor D'OUGE.
 16. Modern Greek. Selections from Modern Greek Writers. *Hours and credit arranged with instructor.* Mr. DE COU.
 17. Aristophanes, *Acharnians, Knights, and Peace*, studied with special reference to their value as sources of history. *Tu, Th,* at 9½. Professor PATTENGILL.
 19. Herodotus, the Persian War; Thucydides, The Sicilian Expedition. *M, W, F,* at 9½. Professor PATTENGILL.

SECOND SEMESTER.

2. Homer, *Odyssey.* Sec. I, Books XIII-XXIV; Secs. II and III, Selections from Books I-XII. *Tu, W, Th.* Sec. I, at 11½; Professor PATTENGILL. Sec. II, at 9½; Sec. III, at 10½; Mr. DE COU.
Sec. I is for students who have read one or more books of Homer in their preparatory course.
3. History of Greek Literature. *F,* Sec. I, at 9½; Sec. II, at 10½. Mr. DE COU.
5. Dramatic Poetry. This course may be elected as—
5a. Sophocles, *Oedipus Rex*; Aristophanes, *Frogs.* *Tu, W, Th, F,* at 4. Professor D'OUGE.
Or 5b. Euripides, *Hippolytus*; Aristophanes, *Frogs.* *M, Tu, W, Th,* at 10½. Professor PATTENGILL.

- 6*b*. Teachers' Seminary. Greek Prose Composition. *M, F*, at 11½.
Professor D'OOGÉ.
- 7*b*. Seminary in Euripides. *F*, 9½–11½. *Two hours credit*. Professor PATTENGILL.
9. The Bucolic Poets. This Course may be elected as—
9*a*. Theocritus. *M, Tu, W*, at 9½. Professor PATTENGILL.
Or 9*b*. Bion and Moschus. *Th*, at 9½. Professor PATTENGILL.
10. Introductory Course in Plato, The Apology, Crito, and selections from the Phaedo. *M, W*, at 3. Professor D'OOGÉ.
- 11*b*. Hellenistic Greek. Seminary. Comprehensive study of the writings of Paul. *Tu, Th*, at 2. Assistant Professor BELSER.
13. Greek Antiquities. Lectures on the public and private life of the Greeks, illustrated by stereopticon views. *W*, at 2. Professor D'OOGÉ.
- Course 13 is open only to candidates for the degree of A. B. or of Ph. B., and special students who receive permission. It will not be given in 1893–94.
- 13*b*. Introduction to Homer. Study of the dialect, metre, and peculiarities of the diction and style of the Epic poetry. *Tu, Th*, at 3. Professor D'OOGÉ.
- 13*c*. Study of the Greek Dialects from the Inscriptions. *Two hours credit*. *Hours arranged with instructor*. Mr. DE COU.

LATIN.

Courses 1 and 2 must precede all the rest.

In order to increase the range of work offered to advanced students, several of the Courses in Latin are given in alternate years, new Courses being introduced as opportunity is thus afforded.

Students who wish to obtain a Teacher's Diploma, with Latin as one of the subjects are expected to complete Courses 1 to 5 inclusive, and Courses 9, 10, 11, 12, 14, 19, and 20.

Courses 1, 2, 3, 4, 5, 6, 7, and 8 are intended primarily for undergraduates; Courses 9, 10, 11, 12, 13, 14, 15, 18, 21, and 22 are for graduates and undergraduates; Courses 16, 17, 19, 20, 23, and 24 are primarily for graduates, though undergraduates of exceptional ability are admitted to them by special permission.

FIRST SEMESTER.

1. Livy, Books I, XXI. Latin Writing. Reading at Sight. *Tu, W, F*. Sec. I, at 8¼; Sec. II, at 9½; Sec. III, at 11½; Dr. CLEMENT. Sec. IV, at 10½; Sec. V, at 2; Sec. VI, at 3; Mr. SOBER.
3. Horace, selections from the Odes, Satires, and Epistles. Studies in Roman Antiquities. *Tu, W, Th, F*. Sec. I, at 9½; Mr. SOBER.

Sec. II, at 10½; Dr. CLEMENT. Sec. III, at 2; Sec. IV, at 3; Assistant Professor DRAKE.

5. Pliny, selected Letters. *Tu, Th*, at 9½. Professor ROLFE.
7. Tacitus, Agricola, Germania, and selections from the Annals and Histories. *M, W, F*, at 9½. Assistant Professor DRAKE.
- [9. Introduction to Classical Philology. Lectures. Professor KELSEY. In Course 9 a brief outline of the history and present condition of classical studies is given, followed by an extended discussion of the methods employed in classical philology. Attention is also given to the bibliography of the subject. It is omitted in 1892-93.]
11. Latin Writing. *Tu, Th*, at 11½. Professor ROLFE.
Course 11 is introductory to Course 12. The principal aim is to secure correctness of expression and a feeling for idiom.
- [13. Lucretius, Books I, II, III, V. Professor KELSEY.
Course 13 is omitted in 1892-93.]
15. Seneca, selections from the Essays and Epistles. *M, W*, at 10½. Assistant Professor DRAKE.
17. Seminary in Latin Masterpieces. A critical study of selected works of Roman Literature. *Tu*, 4-6, and a third hour *arranged with instructor*. *Three hours credit*. Professor ROLFE.
Course 17 is open only to students who receive special permission.
- [19. Seminary in Roman Archæology. Professor KELSEY.
Course 19 is open only to students who have completed Course 10. It is omitted in 1892-93.]
- 19a. Museum Course in Archæology. *Two hours credit*. *Hours arranged with instructor*. Professor ROLFE.
21. Teachers' Seminary. Caesar. *M, W*, at 5. Professor ROLFE.
Course 21 is open only to those who receive special permission.
The exercises of this Course are not open to visitors.
23. Reports on Periodical Literature. The professors and instructors in Latin meet in the Art Seminary Room, *Th*, 4-6, and report on the contents of the technical journals, bearing upon the work of the department, according to an assignment at the beginning of the year. Graduate students and (without credit) undergraduate members of the Teachers' Seminary are admitted to a share in this work.

SECOND SEMESTER.

2. Catullus, selections; Plautus or Terence, two plays; Cicero, De Senectute, and De Amicitia. *M, Tu, W, F*. Sec. I, at 8¼; Sec. II, at 9½; Sec. III, at 11½; Dr. CLEMENT. Sec. IV, at 10½; Sec. V, at 2; Sec. VI, at 3; Mr. SOBER.
4. Roman Literature, with selections from representative authors. *Tu, W, Th, F*. Sec. I, at 9½; Mr. SOBER. Sec. II, at 10½; Dr.

CLEMENT. Sec. III, at 2; Sec. IV, at 3; Assistant Professor DRAKE.

6. Rapid Reading in Latin prose authors. *Tu, Th*, at 9½. Assistant Professor DRAKE.
8. Cicero, philosophical works. *M, W, F*, at 9½. Assistant Professor DRAKE.
- [10. Introduction to Roman Archæology. Elements of Roman archæology; topography and architectural history of Rome; sculpture and painting in the Roman period. Lectures. *Three hours credit*. Professor KELSEY.
Course 10 is omitted in 1892-93.]
12. Latin Writing, advanced course. *Tu, Th*, at 11½. Professor ROLFE.
In Course 12, attention is given not only to correctness of expression, but also to matters of style and the finer distinctions of the language. It is limited to those whose work in Course 11 has been of a very high grade.
14. Latin Grammar. Lectures. *M, W, F*, at 4. Professor ROLFE.
- [16. Latin Inscriptions.
Course 16 is omitted in 1892-93.]
18. Ovid, *Fasti*. Studies in Roman topography and mythology. *Tu, Th*, at 2. Professor ROLFE.
- [20. Seminary in Roman Archæology. Professor KELSEY.
Course 20 is open only to students who have completed Courses 10 and 19. It is omitted in 1892-93.]
22. Teachers' Seminary. *Vergil*. *M, W*, at 5. Professor ROLFE.
The exercises of Course 22 are not open to visitors.
24. Reports on Periodical Literature. *Th*, 4-6.
Course 24 is open to graduate students and (without credit) to undergraduate members of the Teachers' Seminary. Compare Course 23 in first semester.

SANSKRIT.

Courses 1 and 2 are required for admission to any of the higher Courses. All other Courses offered in Sanskrit and in the Semitic languages, except the elementary Courses in Hebrew, are of an advanced character and are intended for graduate students and undergraduates who have had somewhat extended linguistic training.

FIRST SEMESTER.

1. Beginners' Course. Perry's Primer with etymological comparisons of the cognate languages. *Two hours credit. Hours arranged with instructor*. Mr. DE COU.

Course 1 is open to candidates for a degree in Arts, who have pur-

sued Courses in Greek and Latin for four semesters or, instead of either Greek or Latin, Germanics of the early period.

3. Lanman's Sanskrit Reader continued; selected hymns of the Rig-veda. *One hour credit. Hour arranged with instructor.* Mr. DE COU.

SECOND SEMESTER.

2. Interpretation of the extracts from the Nala and Hitopadeśa contained in Lanman's Sanskrit Reader; with incidental study of Whitney's Grammar. *Two hours credit. Hours arranged with instructor.* Mr. DE COU.
4. Either Kālidāsa's Çakuntalā, or selections from Böhtlingk's Sanskrit Chrestomathie. *One hour credit. Hour arranged with instructor.* Mr. DE COU.

SEMITIC LANGUAGES.

FIRST SEMESTER.

1. Introduction to Semitic Palæography and Inscriptions. Semitic alphabets; Assyrian and Babylonian inscriptions; the Moabite Stone of King Mesha; Inscription of Siloam; Sidonian Inscription of King Eshmunazar; the Phœnician in the Poenulus of Plautus, etc. *One hour credit. Hour arranged with instructor.* Assistant Professor BELSER.

Course 1 must be preceded by Courses 1 and 2 in Hebrew.

SECOND SEMESTER.

2. Introduction to Semitic Comparative Grammar. *One hour credit. Hour arranged with instructor.* Assistant Professor BELSER.
- Course 2 is open only to students acquainted with two or more of the Semitic languages.

HEBREW.

FIRST SEMESTER.

1. Beginners' Course. Harper's Hebrew Method and Elements of Hebrew. *Tu, W, Th*, at 4. Assistant Professor BELSER.
3. Selected Psalms. Lectures and recitations. Hebrew Syntax (sentence). *Two hours credit. Hours arranged with instructor.* Assistant Professor BELSER.
7. The Quotations from the Old Testament in the New. A comparative study of the Septuagint and Hebrew Texts. *One hour credit. Hour arranged with instructor.* Assistant Professor BELSER.

SECOND SEMESTER.

2. Selections from Genesis and I Samuel. Harper's Hebrew Syntax (noun and verb). *Two hours credit. Hours arranged with instructor.* Assistant Professor BELSER.
 - [4. Advanced Reading. Study of the Minor Prophets. *Two hours credit.* Assistant Professor BELSER.
- Course 4 is not given in 1892-93, but may be expected in 1893-94.]
6. Isaiah I-XXXIX. A study in Hebrew exegesis and literary criticism. *Two hours credit. Hours arranged with instructor.* Assistant Professor BELSER.
 8. The Books of Samuel in Hebrew and Greek. A study in textual criticism. Hand-book: Driver's Notes on the Hebrew Text of the Books of Samuel. *Two hours credit. Hours arranged with instructor.* Assistant Professor BELSER.

ASSYRIAN.

FIRST SEMESTER.

1. Assyrian for beginners. Lyon's Manual and Delitzsch's Lesestücke. Principles of Assyrian grammar, with exercises in the transliteration and interpretation of historical texts. *Two hours credit. Hours arranged with instructor.* Assistant Professor BELSER.
- Course 1 must be preceded by Courses 1 and 2 in Hebrew.

SECOND SEMESTER.

2. Assyrian for advanced students. Interpretation of the Assyrian account of the Deluge, the Descent of Ishtar to Sheol, fragments of the Creation Tablets and Psalms. *Two hours credit. Hours arranged with instructor.* Assistant Professor BELSER.

ARABIC.

FIRST SEMESTER.

1. Arabic for beginners. Lansing's Manual. *Two hours credit. Hours arranged with instructor.* Assistant Professor BELSER.

SECOND SEMESTER.

2. Continuation of Course 1. Wright's Arabic Grammar and translation of easy prose. Exercises in composition. *Two hours credit. Hours arranged with instructor.* Assistant Professor BELSER.

FRENCH.

Except for students of Engineering, for whom special Courses, designated by letters of the alphabet, are arranged, Courses 1 and 2 must pre-

cede all others. Students who are required to take eight hours in French beyond Courses 1 and 2, are allowed to select from the Courses open to them.

FIRST SEMESTER.

1. Beginners' Course. Grammar and easy reading. *M, W, Th, F.* Sec. I, at 8¼; Sec. II, at 9½; Mr. WEEKS. Sec. III, at 9½; Mr. LEVI. Sec. IV, at 10½; Sec. V, at 2; Sec. VI, at 3; Mr. BOURLAND. Sec. VII, at 3; Mr. EFFINGER.
3. Composition and Translation from English into French. *M, W, F,* at 8¼. Mr. LEVI.
Course 3 is intended for students who want an extended practical knowledge of the language; it is required of all who intend to take a Teacher's Diploma in French.
6. Critical Prose Writing of the Nineteenth Century: Sainte Beuve; Lemaitre; Zola, *Le Roman Expérimental.* *W, F.* Sec. I, at 10½; Mr. LEVI. Sec. II, at 10½; Professor WALTER.
8. French Classic Dramas. *M, W, F.* Sec. I, at 11½; Mr. LEVI. Sec. II, at 11½; Mr. WEEKS. Sec. III, at 11½; Mr. BOURLAND.
10. Poets and Poetry of the Nineteenth Century. *M, Th,* at 9½. Assistant Professor DE PONT.
Course 10 is open to all who have had twelve hours of French, and and to others who receive special permission.
12. La Fontaine's Fables. Advanced practice in composition and conversation. Study and analysis of Books VI-XII. *W, F,* at 9½. Assistant Professor DE PONT.
Course 12 must be preceded by Courses 5 and 18, and by a three-hour Course in reading.
14. Seminary. *M, W,* at 9½. Professor WALTER.
Course 14 is open only to those who receive special permission.
16. Pronunciation and Reading. *M, Th,* at 8¼. Assistant Professor DE PONT.
18. Study of Old French. *Tu, Th,* at 5. Mr. LEVI.
20. Modern French Prose. Musset; Mérimée; Sand. *Tu, Th,* at 10½. Mr. WEEKS.
Course 20 is open only to those who have had not more than eight hours of French.
22. Dramatists of the Eighteenth Century, from the Classical to the Romantic schools. Regnard; Marivaux; Destouches, etc. *M, W, F,* at 10½. Assistant Professor DE PONT.
Course 22 is open to students who have had Course 8 and three hours additional.
24. French Literature of the Sixteenth Century. Lectures, recitations, and essays. *Tu, Th,* at 10½. Professor WALTER.

Course 24 is open to students who have had Course 9, and to others who receive special permission.

26. French Philosophical Writers. Descartes; Malebranche; Condillac. *W, F*, at 11½. Professor WALTER.

Course 26 is open only to those who receive special permission.

SECOND SEMESTER.

2. Modern Prose and Plays. Grammar continued. *M, W, Th, F*. Sec. I, at 8¼; Mr. WEEKS. Sec. II, at 9½; Mr. LEVI. Sec. III, at 9½; Sec. IV, at 10½; Sec. V, at 2; Mr. BOURLAND. Sec. VI, at 3; Mr. EFFINGER.

4. Scientific Reading, *La Nature*. *M, W, Th, F*, at 2. Assistant Professor DE PONT.

In Course 4 the class is limited to *thirty*. Preference is given to B. S. students for whom the Course is prescribed. Other students, if qualified, are admitted in the order of their application.

5. Advanced Composition, continuation of Course 3; intended as preparatory to Seminary work. *M, Th*, at 9½. Assistant Professor, DE PONT.

7. Classic French Prose. Pascal; Bossuet; La Bruyère; Sévigné *W, F*. Sec. I, at 11½; Mr. LEVI. Sec. II, at 10½; Mr. BOURLAND. Sec. III, at 3; Mr. WEEKS.

9. Montaigne. *Tu, Th*, at 9½. Professor WALTER.

Course 9 is open to all candidates for the degree of A. B., who have had ten hours of French, and to others who receive special permission.

11. Prose Writers of the Eighteenth Century. Sec. I, Rousseau, *Contrat Social* and selections; Sec. II, Voltaire; Montesquieu; Diderot. *M, W, F*. Sec. I, at 11½; Professor WALTER. Sec. II, at 11½; Mr. WEEKS.

Course 11 is open only to those who receive special permission.

13. French Lyrics. *La Lyre Française*. *W, F*, at 9½. Assistant Professor DE PONT.

Course 13 is open to students who have had fourteen hours of French.

15. Seminary. Victor Hugo, *La Légende des Siècles*. *F*, 9½–11½. *Two hours credit*. Assistant Professor DE PONT.

Course 15 is conducted in French, and is open only to students who have had Course 12 or its equivalent.

17. Teachers' Course. *W, F*, at 10½. Professor WALTER.

Course 17 is open only to those who receive special permission, and have also completed Course 3 or its equivalent.

19. Conversational Drill, continuation of Course 16. *Two hours credit*.

Hours arranged with instructor. Assistant Professor DE PONT.

21. Contemporary French Drama. *Tu, Th*, at 11½. Mr. LEVI.
23. Study of Old French, continuation of Course 18. *Tu, Th*, at 5. Mr. LEVI.
25. English into French. *M, W*, at 5. Mr. LEVI.
Course 25, parallel to Courses 5 and 19, aims at the same results by different methods. It is open only to those who receive special permission.
27. Didactic, Narrative, and Satirical Poetry. Boileau; Voltaire. *Tu, Th*, at 10½. Mr. WEEKS.
29. Contemporary Letter-Writers. Sand; Doudan. *Tu, Th*, at 10½. Mr. LEVI.
31. French Philosophical Writers, continuation of Course 26. Jouffroy; Taine. *W, F*, at 9½. Professor WALTER.
- [33. The Satirical Spirit in French Literature. Seminary, open to students who write and speak French and who receive special permission. *Two hours credit. Hours arranged with instructor.* Assistant Professor DE PONT.
Course 33 is not given in 1892-93.]

Special Courses in French for Students of Engineering.

Students of Engineering are not admitted to the other Courses offered in French, except by special permission.

FIRST SEMESTER.

- B. Narrative Prose. Daudet's *Choix de Contes*; Souvestre's *Confession d'un Ouvrier*. *M, W*, Sec. I, at 2; Sec. II, at 4. Mr. EFFINGER.
Course B is open to those who have taken Course A, or who have passed an admission examination in French.
- D. Scientific Reading. *W, F*, Sec. I, at 8¼; Sec. II, at 9½. Mr. EFFINGER.

SECOND SEMESTER.

- A. Beginners' Course. Grammar and Reader. *M, W, Th, F*, Sec. I, at 2; Sec. II, at 4. Mr. EFFINGER.
- C. Descriptive Prose. *M, W*, at 9½. Mr. EFFINGER.

ITALIAN.

FIRST SEMESTER.

2. Continuation of Course 1. Ariosto or Tasso. *Tu, Th*, at 11½. Professor WALTER.

4. *La Vita Nuova*. *W*, at 10½. Mr. WEEKS.
Course 4 must be preceded by Course 1.

SECOND SEMESTER.

1. Grandgent's Italian Grammar. Easy Prose. *M, W, F*, at 10½
Mr. WEEKS.
Course 1 is open only to those who have completed Courses 1 and 2
in French.
3. Dante, *Divina Commedia*. Lectures and recitations. *Tu, Th*, at
10½. Professor WALTER.
Course 3 must be preceded by Courses 1 and 2.

SPANISH.

FIRST SEMESTER.

1. Manning's Spanish Grammar. *Tu, Th*, at 8¼. Professor WALTER.
Course 1 is open only to those who have completed Courses 1 and
2 in French.

SECOND SEMESTER.

- 2 Continuation of Course 1. *Tu, Th*, at 8¼. Professor WALTER.

GERMAN.

Except for students of Engineering, for whom there are special Courses designated by the letters A, B, etc., the required work in German is all included in Courses 1, 2, 3, 4, which should be taken in the order of the numerals. The student must take, for the elementary requirement of eight hours, Course 3', together with one of the options designated as 3*a*, 3*b*, etc., and Course 4' together with one of the options designated as 4*a*, 4*b*, and also one of those designated as 4₁, 4₂, etc.; for the requirement of sixteen hours, the two previous requirements combined. The numbers above 4 designate advanced electives which can be taken only by special permission. In the intermediate Courses, 5, 12, 16', and 20, separate instruction amounting to one hour a week and adapted as far as possible to individual needs, will be given to graduate students and to under-graduates working on the university system with German as the major study. The graduate Courses, 13, 14 and 16, are for specialists and not open to students working on the credit system.

FIRST SEMESTER.

1. Beginners' Course. Joyne-Meissner's German Grammar, and Joyne's or Brandt's German Reader. *T, W, Th, F*. Sec. I, at 8¼; Sec. II, at 9½; Mr. McLOUTH. Sec. III, at 10½; Sec. IV, at 11½; Mr. VOSS. Sec. V, at 2; Sec. VI, at 3; Mr. HILDNER.

3. Classical Plays and Modern Prose, with collateral practice in writing and speaking German. This Course may be elected as—
 - 3'. Harris's German Composition, with colloquial practice. *F*. Sec. I, at $8\frac{1}{4}$; Sec. II, at $9\frac{1}{2}$; Mr. VOSS. Sec. III, at $10\frac{1}{2}$, Sec. IV, at $11\frac{1}{2}$; Mr. McLOUTH. Sec. V, at 2; Assistant Professor HENCH. Sec. VI, at 4; Mr. HILDNER.
 - 3a. Schiller's Wilhelm Tell. *M, W*, at 4. Mr. HILDNER.
 - 3b. Schiller's Jungfrau von Orleans. *M, W*, at $10\frac{1}{2}$. Mr. McLOUTH.
 - 3c. Goethe's Egmont. *M, W*. Sec. I, at $9\frac{1}{2}$; Mr. VOSS. Sec. II, at 2; Assistant Professor HENCH.
 - 3d. Goethe's Iphigenie. *Tu, Th*. Sec. I, at $11\frac{1}{2}$; Mr. HILDNER. Sec. II, at 2; Assistant Professor HENCH.
 - 3e. Lessing's Minna von Barnhelm. *Tu, Th*. Sec. I, at $10\frac{1}{2}$; Mr. McLOUTH. Sec. II, at 4; Mr. HILDNER.
 31. Schönbach's Ueber Lesen und Bildung. *Tu, Th*, at 3. Assistant Professor HENCH.
 32. Becker's Friedrich der Grosse. *M, W*, at 2. Mr. MENSEL.
5. The First Part of Goethe's Faust, Thomas's Edition. *Tu, Th*, at $8\frac{1}{4}$. Professor THOMAS.
7. Elementary Middle High German; Wright's Primer, and Paul's *Mittelhochdeutsche Grammatik*. *Tu, Th*, at 3. Assistant Professor HENCH.
9. Teachers' Course. Lectures and quizzes (both in German) upon the history of German Literature in the Eighteenth century; recitations from Wilmann's *Deutsche Grammatik*; advanced German composition; discussion of assigned masterpiece in a German essay. *M, W, F*, at $8\frac{1}{4}$. Professor THOMAS.
11. History of German Literature from the earliest times to the death of Goethe. Lectures (in English) once a week, and readings twice a week from Müller's *German Classics*. *M, W, F*, at $9\frac{1}{2}$. Professor THOMAS.
13. Goethe Seminary; critical investigations pertaining to the works of Goethe's storm and stress period (1772-1775). The Goethe Seminary is intended for specialists and is not open to students working on the credit system. It meets once a week at the convenience of those concerned.
15. Advanced German Composition. *Tu, Th*, at $9\frac{1}{2}$. Mr. VOSS.

SECOND SEMESTER.

2. German Grammar continued, with reading of easy narrative prose and modern dialogue; Storm's *Immensee*; Riehl's *Fluch der Schönheit*; Chamisso's *Peter Schlemihl* and Freytag's *Journalisten*. *Tu, W, Th, F*. Sec. I, at $8\frac{1}{4}$; Sec. II, at $9\frac{1}{2}$; Mr. Mc-

- LOUTH. Sec. III, at 10½; Sec. IV, at 11½; Mr. VOSS. Sec. V, at 3; Sec. VI, at 4; Mr. HILDNER.
4. Continuation of Course 3, with more difficult texts. This Course may be elected as—
- 4'. German Composition and colloquial practice. *F.* Sec. I, at 8¼; Sec. II, at 9½; Mr. McLOUTH. Sec. III, at 10½; Sec. IV, at 11½; Mr. VOSS. Sec. V, at 2; Sec. VI, at 3; Assistant Professor HENCH. Sec. VII, at 4; Mr. HILDNER.
- 4a. Goethe's Tasso. *M, W*, at 2. Assistant Professor HENCH.
- 4b. Lessing's Nathan der Weise. *Tu, Th*, at 4. Mr. HILDNER.
- 4c. Goethe's Götz von Berlichingen. *M, W*, at 9½. Mr. VOSS.
- 4d. Schiller's Wallenstein. *Tu, Th*, at 2. Assistant Professor HENCH.
41. Goethe's Prose; extracts from Werther, Wilhelm Meister, and Dichtung und Wahrheit. *M, W*, at 3. Assistant Professor HENCH.
42. Schiller's Prose; the second book of the Dreissigjähriger Krieg and the essay Ueber naïve und sentimentalische Dichtung. *M, W*, at 10½. Mr. McLOUTH.
43. Heine's Prose; Reisebilder. *M, W*, at 4. Mr. HILDNER.
44. Scientific Prose; Helmholtz's Goethe's Naturwissenschaftliche Arbeiten and Cohn's Ueber Bakterien. *M, W*, at 2. Mr. MENSEL.
6. The Second Part of Goethe's Faust, Schröer's Edition. *Tu, Th*, at 8¼. Professor THOMAS.
8. Advanced Middle High German; Volksepos, Kunstepos, Walther von der Vogelweide. *Tu, Th*, at 3. Assistant Professor HENCH.
10. Teachers' Course; continuation of Course 9, with pedagogical discussions of methods, text-books, etc. *M, W, F*, at 8¼. Professor THOMAS.
12. History of German Literature; continuation of Course 11. *M, W, F*, at 9½. Professor THOMAS.
14. Schiller Seminary; Schiller's philosophical poems as related to his studies in the Kantian and Fichtean philosophy.
The Schiller Seminary is intended for specialists and is not open to students working on the credit system. It meets once a week, at the convenience of those concerned.
16. Old High German. Braune's Althochdeutsche Grammatik and Althochdeutsches Lesebuch. *Hours arranged with instructor.* Assistant Professor HENCH.
- 16'. Laokoön; a study of Lessing's essay with comparison of the critiques by Herder and Goethe. *Tu, Th*, at 9½. Professor THOMAS.

20. Modern German Grammar from a historical and comparative point of view. *Tu, Th*, at 4. Assistant Professor HENCH.

Special Courses in German for Students of Engineering.

Students of Engineering are not admitted to the other Courses offered in German, except by special permission.

FIRST SEMESTER.

- A. Beginners' Course. Otis's German Grammar, with reading of easy stories. *Tu, W, Th, F*, Sec. I, at $8\frac{1}{4}$; Sec. II, at $9\frac{1}{2}$. Mr. MENSEL.
C. Descriptive Prose. Deutschland und die Deutschen. *Tu, Th*, at 3. Mr. MENSEL.

SECOND SEMESTER.

- B. Narrative Prose. Easy stories. *Tu, Th*, at $8\frac{1}{4}$. Mr. MENSEL.
D. Technical prose. Schroot's Der Dampf. *W, F*, at $8\frac{1}{4}$. Mr. MENSEL.

GOTHIC.

FIRST SEMESTER.

1. Wright's Primer of the Gothic Language with readings from Ulfilas. *One hour credit. Hour arranged with instructor.* Assistant Professor HENCH.

SWEDISH.

The Courses in Swedish are open only to those who receive special permission.

FIRST SEMESTER.

1. Modern Swedish Grammar and the reading of selections. *One hour credit. Hour arranged with instructor.* Professor THOMAS.

SECOND SEMESTER.

2. Tegnér's Frithjof's Saga and selections from Runeberg. *One hour credit. Hour arranged with instructor.* Professor THOMAS.

DANISH-NORWEGIAN.

The Courses in Danish-Norwegian are omitted in 1892-93, but may be expected in 1893-94. They are open only to those who receive special permission.

FIRST SEMESTER.

1. Modern Danish-Norwegian Grammar, and the reading of selections. *One hour credit.* Professor THOMAS.
2. Ibsen's Samfundets Støtter. *One hour credit.* Professor THOMAS.

In connection with this Course, Professor Thomas gives a short series of free public lectures on the life and works of Ibsen.

ENGLISH AND RHETORIC.

Courses 11, 12, and 14 are conducted on the Seminary plan, the class being divided into small sections for the presentation of theses and reports, and for extempore discussion and conference. These Courses are designed for advanced students only.

Courses 2, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 20, are ordinarily found suitable for graduate students as well as for undergraduates. In the case of students who have taken these Courses for their first degree, special advanced Courses are provided for graduate study, after conference with the candidate.

FIRST SEMESTER.

1. Rhetoric and Composition. Essays and Speeches. *M, Th*, Sec. I, at 2; Sec. II, at 3; *Tu, F*, Sec. III, at 2; Sec. IV, at 3; *Tu, Th*, Sec. V, at 5. Mr. REBEC.

In the first semester Course 1 is designed especially for candidates for the degrees of A. B. and Ph. B.; in the second semester, for all other students.

2. Science of Rhetoric. Essays. *M, W*, Sec. I, at 2; Sec. II, at 3. Assistant Professor SCOTT.

Course 2 must be preceded by Course 1, and by Course 1 or Course 2 in Philosophy.

3. Old English (Anglo-Saxon) for beginners. *M, W*, Sec. I, at 4; Sec. II, at 5. Assistant Professor HEMPL.

It is recommended that Course 3 be preceded by at least one year's study of German.

5. English Literature. Period of Late Middle English (Fourteenth Century), with especial reference to Chaucer. *Tu, Th*, Sec. I, at 2; Sec. II, at 3. Assistant Professor HEMPL.

Course 5 must be preceded by Course 1. It is recommended that it be preceded also by Courses 3 and 4, and by at least one year's study of French.

7. Teacher's Course. Historical English Grammar. *Tu, Th*, at 4. Assistant Professor HEMPL.

9. Old-English Syntax. *M, W*, at 3. Assistant Professor HEMPL.
- Course 9 must be preceded by Course 3.

11. English Literature Seminary. Study of Masterpieces: More's Utopia; Bacon's Essays; Milton's Areopagitica; Burke's Reflections on the French Revolution; Carlyle's Sartor Resartus; George Eliot's Silas Marner; Spenser's Faery Queen, Book I; Shakespeare's Sonnets; Milton's Paradise Lost; Dryden's Absalom and Achitophel; Pope's Essay on Man; Wordsworth's Excursion; Tennyson's Princess. *M*, Sec. I, 9½-11½; *Tu*, Sec. II, 9½-11½; *W*, Sec. III, 4-6; *Th*, Sec. IV, 4-6. *Two hours credit.* Professor DEMMON.

Course 11 must be preceded by Courses 2, 5, 6.

15. Principles of Style. Inductive study of masterpieces of English prose, with a view to verifying rhetorical principles. Lectures, readings, and discussions. *Tu*, *Th*, Sec. I, at 2; Sec. II, at 3. Assistant Professor SCOTT.

Course 15 is open to those who have taken or are taking Course 2.

SECOND SEMESTER.

1. Rhetoric and Composition. Essays and Speeches. *M*, *W*, Sec. I, at 2; Sec. II, at 3; *Tu*, *Th*, Sec. III, at 2; Sec. IV, at 3. Mr. REBEC. See note to Course 1 in first Semester.

- 1a. Paragraph Writing. *Two hours credit. Hours arranged with instructor.* Mr. REBEC.

Course 1a is open to those who have passed Course 1.

2. Science of Rhetoric. Essays. *Tu*, *Th*, Sec. I, at 2; Sec. II, at 3. Assistant Professor SCOTT.

See note to Course 2 in first semester.

4. Transition and Early Middle English (Twelfth and Thirteenth Centuries). *Tu*, *Th*, at 2. Assistant Professor HEMPL.

Course 4 must be preceded by Course 3.

6. English Literature. Period of Modern English. *M*, *W*, Sec. I, at 2; Sec. II, at 3. Assistant Professor HEMPL.

Course 6 must be preceded by Course 5. In Course 6 a manual is used to give a general survey of the subject; but special attention is directed to each author or period by certain members of the class, each member thus making about half a dozen special studies and reports.

8. Old-English (Anglo-Saxon) Poetry. *M*, *W*, at 4. Assistant Professor HEMPL.

Course 8 must be preceded by Course 3.

10. Problems in Higher Rhetoric and Literary Criticism. Reading and discussion of the whole or of parts of standard works in rhetoric and literary criticism. *M*, Sec. I, 2-4; *W*, Sec. II, 2-4. *Two hours credit.* Assistant Professor SCOTT.

Course 10 is open to students who have passed Course 2 in English

and Course 11 in Philosophy, and to such others as receive special permission. It is recommended as an introduction to Course 11.

12. Shakespeare Seminary. Plays selected: *A Midsummer Night's Dream*, *The Merchant of Venice*, *As You Like It*, *Twelfth Night*, *The Tempest*, *Richard II*, the two parts of *Henry IV*, *Henry V*, *Richard III*, *Hamlet*, *Macbeth*, *Othello*, *King Lear*, and *Coriolanus*. *M*, Sec. I, 9½-11½; *Tu*, Sec. II, 9½-11½; *W*, Sec. III, 4-6. *Two hours credit*. Professor DEMMON.

Course 12 must be preceded by Course 11.

13. The English Drama before Shakespeare. Lectures. *Th*, at 3. Professor DEMMON.

Course 13 is specially intended for students who are pursuing Course 12, but is also open to those who have passed Courses 5 and 6.

14. American Literature Seminary. Authors studied: Irving, Poe, Hawthorne, Bryant, Longfellow, Emerson, Thoreau, Bayard Taylor, Whittier, Holmes, Lowell, Howells and James. *Th*, 4-6. *Two hours credit*. Professor DEMMON.

Course 14 must be preceded by Course 11. Representative works of the authors above named will be studied and compared with masterpieces of British authors, and an attempt made to discover the distinctively American element.

16. The Elements of Phonetics. *Tu*, *Th*, at 4. Assistant Professor HEMPL. In Course 16 an introduction is given to the principles of general phonetics.

18. Rapid Writing. *M*, 8¼-10½. *Two hours credit*. Assistant Professor SCOTT.

Course 18 is open only to such as receive special permission.

19. Spoken English, with especial reference to American English. *Tu*, *Th*, at 4. Assistant Professor HEMPL.

In Course 19 a study is made (with the aid of Sweet's Primer of Spoken English) of colloquial English as distinguished from the English of books and artificial speech; and the attempt is made to settle some of the important facts as to the fortunes of English speech in our country. The Course is recommended to those who expect to teach English. Compare Course 16.

20. Old-English Phonology and Morphology. *Tu*, *Th*, at 3. Assistant Professor HEMPL.

Course 20 must be preceded by Course 3.

ELOCUTION AND ORATORY.

FIRST SEMESTER.

1. Elocution. Exercises in vocal culture, breathing, position, and gesture; phonology and pronunciation; elements of quality and

force of voice, with their applications. *M, W, Sec. I, at 10½; Sec. II, at 11½.* Professor TRUEBLOOD.

3. Study of Great Orators: Ancient Orators, and Modern Orators of Continental Europe. Lectures on methods of public address and sources of power; study of representative selections. *Tu, Th, at 10½.* Professor TRUEBLOOD.

Course 3 must be preceded by Courses 1 and 2.

5. Shakespearian Reading. Critical study and reading of Julius Caesar and Much Ado About Nothing. *Tu, Th, at 9½.* Professor TRUEBLOOD.

Course 5 must be preceded by Courses 1 and 2.

SECOND SEMESTER.

2. Elocution. Exercises in vocal culture continued; principles of action, elements of pitch and time, and emphasis, with their applications. *M, W, Sec. I, at 10½; Sec. II, at 11½.* Professor TRUEBLOOD.
Course 2 must be preceded by Course 1.
4. Study of Great Orators: English and American Orators. *Tu, Th, at 9½.* Professor TRUEBLOOD.

Course 4 must be preceded by Courses 1, 2, and 3.

6. Oral Discussions. Designed to develop readiness of extemporization. *Tu, Th, at 10½.* Professor TRUEBLOOD.

Course 6 must be preceded by Courses 1 and 2 by Course 2 in English.

HISTORY.

A student who intends to make a special study of history will find it to his advantage to elect Courses in substantially the following order: (1) Course 1 or 6; (2) Course 6 or 1; (3) Courses 7, 14; (4) Courses 2, 8, 15; (5) Courses 3, 5, 9; (6) Courses 4, 10, 17, 12; (7) Course 11. Courses 5, 5a, 11, 12, 12a are suitable for graduate students who have specialized in history. Courses 19 and 20 are for graduates and students on the University system.

FIRST SEMESTER.

1. Political and Constitutional History of England. Text-book: Gardiner. *M, W, F. Sec. I, at 4; Sec. II, at 5; Mr. Dow. Sec. III, at 4; Dr. Ames. Tu, Th, F. Sec. IV, at 11½; Dr. Ames.*
Course 1 is also given in the second semester. Students may begin their work in history with this Course, or with Course 6.
3. Constitutional and Political History of the United States. Lectures, *Tu, Th, at 3.* Quiz on the lectures and on Von Holst, *F, Sec I, at 11½; Sec. II, at 2.* *Three hours credit.* Professor MC-LAUGHLIN.

Course 3 must be preceded by at least three Courses in History, preferably 1, 2, and 6 or 7.

5. Constitutional Law and Political Institutions of the United States. Text-books: Cooley and Brycc. *M, W, F*, at 3. Professor McLAUGHLIN.
- 5a. Supplementary to Course 5, for more careful study of political and administrative machinery and of municipal government. Intended primarily for graduates and students on the University system. *One hour credit. Hour arranged with instructor.* Professor McLAUGHLIN.
6. History of Europe with special reference to the Middle Ages. Text-book: Emerton, with lectures and collateral reading. *M, W, F*. Sec. I, at 8¼; Sec. II, at 5; Dr. AMES. Sec. III, at 8¼; Mr. Dow. *M, Tu, Th*. Sec. IV, at 11½; Dr. AMES.

Course 6 is also given in the second semester. Students may begin their work in History with this Course or with Course 1.

7. History of Europe during the Sixteenth and Seventeenth Centuries. Lectures. *Tu, Th*, at 8¼. Assistant Professor SPENCER.
- 7a. Supplementary to Course 7. Quiz on the lectures and on collateral reading. *M*, Sec. I, at 8¼; *W*, Sec. II, at 8¼. Assistant Professor SPENCER.
9. History of the French Revolution and of the Empire of Napoleon. Text-books: Gardiner and Fyffe. *M, W, F*, at 9½. Assistant Professor SPENCER.
11. Seminary. Constitutional History of the United States during the Rebellion and the Period of Reconstruction. *Sat*, 8½–10½. *Two hours credit.* A second section will be formed for graduates and students on the University system. *Hours arranged with instructor.* Professor McLAUGHLIN.

Course 11 must be preceded by Courses 3 and 4, and ought not to be elected before the fourth year of residence.

14. History and Institutions of the more ancient nations and of Greece. Text-book: Oman. *Tu, Th, F*, at 10½. Dr. AMES.
18. History of England since 1688. Text-book: Gardiner. *W, F*, at 4, Assistant Professor SPENCER.
20. Conferences with students on the University system or graduate students who have European history as a major or a minor study. *One hour a week.* Assistant Professor SPENCER.

Course 20 is continued in the second semester.

SECOND SEMESTER.

1. Political and Constitutional History of England. Text-book: Gardiner. *M, W, F*. Sec. I, at 3; Sec. II, at 4; Mr. Dow. *Tu, Th, F*. Sec. III, at 11½; Dr. AMES.

See note to Course 1 in first semester.

2. American Colonial History. Lectures. *M, W*, at 11½. Professor McLAUGHLIN.

Course 2 must be preceded by Course 1, and should be preceded by at least one other Course in European history.

- 2a. Supplementary to Course 2. Quiz on lectures and text-book. *W*, at 5. Mr. DOW.

4. Constitutional and Political History of the United States, continuation of Course 3. Lectures, *Tu, Th*, at 3. Quiz on the lectures and on Von Holst, *F*, Sec. 1, at 2; Sec. 11, at 3. *Three hours credit*. Professor McLAUGHLIN.

Course 4 must be preceded by Course 3.

6. History of Europe with special reference to the Middle Ages. Text-book: Emerton, with lectures and collateral reading. *M, W, F*. Sec. I, at 8¼; Dr. AMES. Sec. II, at 8¼; Mr. DOW. *M, Tu, Th*. Sec. III, at 11½; Dr. AMES.

See note to Course 6 in first semester.

8. History of the Eighteenth Century. Lectures. *Tu, Th*, at 8¼. Assistant Professor SPENCER.

- 8a. Supplementary to Course 8. Quiz on the lectures and on collateral reading. *One hour credit. Hour arranged with instructor*. Assistant Professor SPENCER.

10. History of Europe since 1815. Lectures, with text-book and collateral reading. *M, W*, at 8¼. Assistant Professor SPENCER.

12. Political Science and Comparative Constitutional Law. Text-books, lectures, and collateral reading. *M, W*, at 4. Professor McLAUGHLIN.

- 12a. Supplementary to Course 12. Intended primarily for graduate students and students on the University system. *One hour credit. Hour arranged with instructor*. Professor McLAUGHLIN.

15. Roman History and Institutions. Text-books and collateral reading. *Tu, Th, F*, at 10½. Dr. AMES.

17. A study of the condition of government, society, and institutions in France on the eve of the Revolution. Text-books: Taine's *Ancient Régime*. *M, W*, at 9½. Assistant Professor SPENCER.

- 18a. History of England since 1688. Text-book: Gardiner. *M, W, F*, at 4. Dr. AMES.

19. A study of current historical literature and of topics in constitutional and administrative law. *One hour credit. Two hours every two weeks*. Professor McLAUGHLIN, Assistant Professor SPENCER, and Dr. AMES.

Course 19 is intended for graduates and students on the University system.

20. Conferences with students on the University system or graduate students who have European history as a major or minor study. *One hour a week.* Assistant Professor SPENCER.
Course 20 is continued from the first semester.

PHILOSOPHY.

A student intending to take all the work offered in philosophy should take the Courses in about the order of their numbers, beginning with Course 1 in the second year of residence at the University. To students not intending to make a specialty of philosophy, it is a matter of indifference whether Courses 5, 6, 7, and 8 are taken in their third or fourth year.

Courses 1, 1*a*, 1*b*, 2, 3, 4, 5, 6, 7, 8, and 9, are primarily for undergraduates. The intermediate Courses 4*a*, 5*a*, 11, 12, 13, 13*a*, 14, 15, 15*a*, 16, 16*a*, 17, 18 and 18*a* are for graduates and advanced undergraduates. Courses 4*a*, 13*a*, and 15*a* are open only to graduates and undergraduates on the University system. The same restriction applies to the graduate Courses 20, 21, 22, 23, and 24.

FIRST SEMESTER.

- 1*a*. Elementary Logic. Text-book: Hyslop's Elements of Logic. *Tu, Th*, at 8¼. Mr. LLOYD.
See note to Course 1 in second semester.
2. General Psychology. Text-book: Dewey's Psychology. Other books specially recommended are James's Psychology, Briefer Course, and Höffding's Elements of Psychology. Lectures and exercises. *M, W, F*, at 9½. Mr. LLOYD.
Course 2 is given also in the second semester.
3. British Ethics; a general survey from Hobbes to Mill. Lectures and readings. *W, F*, at 3. Mr. LLOYD.
Course 3 must be preceded by Course 2. It is non-technical in character, its intention being to show how English life has reflected itself in thought.
4. History of Ancient and Mediæval Philosophy. Lectures and readings in Plato and Aristotle. Two theses. *M, W, F*, at 10½. Mr. MEAD.
- 4*a*. Special studies in Ancient Philosophy. *One hour credit. Hour arranged with instructor.* Mr. MEAD.
6. Introduction to Philosophy. Lectures and syllabus. *W, F*, at 11½. Professor DEWEY.
Course 6 must be preceded by Course 2.
8. Movements of Thought in the Nineteenth Century. Lectures. *Tu, Th*, at 10½. Professor DEWEY.
Course 8 must be preceded by two Courses in Philosophy. It is non-

technical in character, its object being to show the unity in the philosophic and other main tendencies of the Century.

9. Experimental Psychology. Statement of psychological problems in terms of the organism. Lectures, demonstrations, and experiments. *M, W, F*, at 9½. Mr. MEAD.

Course 9 must be preceded by Course 2.

- [11. Advanced Logic: The Theory of Science. Lectures. Professor DEWEY.

Course 11 is not given in 1892-93. It may be expected in 1893-94.]

12. Æsthetics: The Theory of the Beautiful in Nature and Art. Lectures and experimental work. *Tu, Th*, at 9½. Assistant Professor SCOTT.

Course 12 must be preceded by at least two Courses in Philosophy.

The illustrative material in 1892-93 will be drawn from the works of Leonardo da Vinci and Michael Angelo.

13. Political Philosophy: The Theory and Institutions of Social Organization. Lectures. *M, Tu, Th*, at 11½. Professor DEWEY.

Course 13 must be preceded by Course 7, or accompanied by Course 9.

- 13a. Special studies in the History of Political Philosophy. Plato's Republic, Kant's Elements of Law, and Spencer's Sociology. *Tu*, at 2. Professor DEWEY.

15. Kant's Critique of Pure Reason, Meiklejohn's translation. Lectures and readings. *Tu, Th*, at 3. Mr. LLOYD.

- 15a. Individual work in Kant's Critique. *One hour credit. Hour arranged with instructor.* Mr. LLOYD.

20. Seminary. Investigations into psychical phenomena of living organisms. Laboratory work and lectures. *Four hours credit.* Mr. MEAD.

Course 20 is open to undergraduates who have had the necessary preliminary scientific training.

21. Seminary. The development of Christian philosophy in the first four centuries after Christ. *Three hours credit. Hours arranged with instructor.* Professor DEWEY.

SECOND SEMESTER.

1. Logic. This Course may be elected as—

1a. Elementary Logic. Text-book: Hyslop's Elements of Logic. *Tu, Th*, at 8¼. Mr. LLOYD.

or 1b. Inductive Logic. Text-book: Fowler's Inductive Logic. *W, F*, at 9½. Mr. LLOYD.

Credit will not be given for both 1a and 1b; while either will meet the requirements for a degree, 1b is of more practical value than 1a.

2. General Psychology. *M, W, F*, at 8¼. Mr. LLOYD.

Course 2 is given also in the first semester.

5. History of Modern Philosophy. Lectures, with readings from Descartes, Spinoza, Locke, Berkeley, Hume, and Kant. Two theses. *M, W, F*, at 10½. Mr. MEAD.

Course 5 should be preceded by Course 4.

- 5a. Special studies in the History of Modern Philosophy. *One hour credit. Hour arranged with instructor.* Mr. MEAD.
7. Ethics. Text-book: Dewey's Outlines of Ethical Theory. *Tu, Th*, at 10½. Professor DEWEY.
14. Matter and Motion. The net results of the concepts of modern science. The starting point will be found in the writings of Spencer and Clifford. Lectures and readings. *W, F*, at 11½. Mr. MEAD.

Course 14 must be preceded by Course 6. It is especially adapted for scientific students.

16. The Philosophy of Spinoza, Elwes's translation. Lectures and readings. *Tu, Th*, at 3. Mr. LLOYD.

Course 16 must be accompanied or preceded by Course 5, and preceded by Course 6.

- 16a. Special studies in the philosophy of Spinoza. *One hour credit. Hour arranged with instructor.* Mr. LLOYD.
17. English Psychology: from Locke, through Hartley and the Mills, to Bain. *M, Tu, Th*, at 9½. Mr. MEAD.

Course 17 must be preceded by Course 2. It is recommended that Course 5 precede or accompany it.

18. Hegel's Logic, Wallace's translation. *Tu, Th*, at 11½. Professor DEWEY.

Course 18 must be preceded by Course 15.

- 18a. The Hegelian Categories in their relation to the Kantian. *One hour credit. Hour arranged with instructor.* Professor DEWEY.

22. Æsthetics of Renaissance Art. Lectures and individual study. *One hour credit. Hour arranged with instructor.* Assistant Professor SCOTT.

23. Seminary. Continuation of Course 20, with study of pathological psychology in asylums and hospitals. *Four hours credit. Hours arranged with instructor.* Mr. MEAD.

24. Seminary. *Three hours credit. Hours arranged with instructor.* Professor DEWEY.

THE SCIENCE AND THE ART OF TEACHING.

Students who wish to prepare themselves for ordinary class-room duties are advised to pursue Course 1, if they can take but one; those who propose to assume the management of high schools, or graded schools, should

take Course 5 in connection with Course 1. In both cases, however, it is desirable for them to pursue Course 2. The order in which Courses 1 and 2 are taken is not material. Students are recommended to take Course 1 or Course 2 before the historical Courses. A course of reading is prescribed in connection with Courses 1 and 2.

FIRST SEMESTER.

1. Practical: the arts of teaching and governing; methods of instruction and general school-room practice; school hygiene; school law. Recitations and lectures. Text-book: Compayré's Lectures on Pedagogy. *Tu, W, Th, F*, at 2. Professor HINSDALE.
3. History of Education: ancient and mediæval. Recitations and lectures. Text-book: Compayré's History of Pedagogy. *Tu, W, Th*, at 5. Professor HINSDALE.
5. School Supervision: embracing general school management, the art of grading and arranging courses of study, the conduct of institutes, etc. Recitations and lectures. Text-book: Payne's Chapters on School Supervision. *M, W, F*, at 8¼. Professor HINSDALE.

SECOND SEMESTER.

2. Theoretical and critical: the principles underlying the arts of teaching and governing. Lectures. *Tu, W, Th, F*, at 2. Professor HINSDALE.
4. History of education: modern. Recitations and lectures. Text-book: Compayré's History of Pedagogy. *Tu, W, Th*, at 5. Professor HINSDALE.
6. The comparative study of educational systems, domestic and foreign. Lectures. *Tu, Th*, at 8¼. Professor HINSDALE.
7. Seminary. Study and discussion of special topics in the History and Philosophy of Education. *M, W*, at 8¼. Professor HINSDALE.

POLITICAL ECONOMY.

The Courses in Political Economy are classified as undergraduate, intermediate, and graduate Courses. The undergraduate Courses, viz: Courses 1, 2, 3, and 5, may be taken by any student, but are not accepted as counting for an advanced degree. The intermediate Courses, viz: Courses 4, 6, 7, 8, 9, 10, 11, 12, and 13, may also be taken by any student; in the case, however, of students who are pursuing their work on the University system, and of graduate students, special instruction of one hour a week is given in connection with each Course. This extra hour is devoted to a more careful analysis and a more extended discussion than is possible in the lectures. The graduate Courses, viz: Courses 15, 16, 17,

18, 20, 21, and 22, are not open to undergraduate students who pursue their work on the credit system, but may be taken by those who are working on the University system.

FIRST SEMESTER.

1. Elements of Political Economy (short course). Text-book: Walker. *M, W, F*, Sec. I, at 2; Sec. II, at 3. Mr. C. H. COOLEY.
Course 1 is designed for those who desire to obtain a general knowledge of political economy. It embraces, in addition to a statement of fundamental principles, brief studies on practical economic problems. It is not accepted as a substitute for Course 2 unless supplemented by Course 3.
3. History of the Development of Industrial Society. Lectures and quiz. Lectures, *Tu, Th*, at 11½. Quiz, *M*, Sec. I, at 10½; Sec. II, at 11½; *Tu*, Sec. III, at 11½; *W*, Sec. IV, at 10½; Sec. V, at 11½. Professor ADAMS and Mr. DIXON.
Course 3 is designed to be introductory to all Courses in Political Economy except Course 1. It is not, however, required for admission to such Courses. It embraces a history of English industrial society from the twelfth century to the present time, and is designed to show how modern industrial customs and rights came into existence. It is desirable that it be preceded by Course 1 in History. Students who intend to take all the work offered in economics should elect Course 3 the first semester of their second year of residence.
5. Problems in Political Economy. Lectures and quiz. Lectures, *M, W, F*, at 2. Quiz, *Tu*, Sec I, at 2; *Th*, Sec. II, at 2; *F*, Sec. III, at 3. Professor ADAMS and Assistant Professor F. M. TAYLOR.
Course 5 treats in a cursory manner current problems in political economy. The problems studied are the following: The Railway Problem; Industrial Crises; Free Trade and Protection; Industrial Reforms; Labor Legislation; Taxation. It is designed as the supplement of Course 2, by which it must be preceded; and as introductory to Courses 4, 6, 7, 8, 9, 10, 11, 12, and 13, although it is not required for those Courses.
7. History and Theory of Land Tenure and Agrarian Movements. *M, W*, at 4. Assistant Professor F. M. TAYLOR.
9. History and Principles of Currency and Banking. *Tu, Th*, at 4. Assistant Professor F. M. TAYLOR.
11. Industrial and Commercial Development of the United States. *Tu, Th*, at 11½. Assistant Professor F. M. TAYLOR.
13. Theory of Statistics. *Th*, at 5. Mr. C. H. COOLEY.
Courses 7, 9, 11, and 13 must be preceded by Course 2.

15. Critical Analysis of Economic Thought. *M*, at 8¼. Professor ADAMS.
17. Seminary in Finance. *M*, 9½-11½. Professor ADAMS.
21. Current Economic Legislation and Literature. *Once in two weeks*. *W*, 7-9, P. M. Professor ADAMS, Assistant Professor F. M. TAYLOR, Mr. C. H. COOLEY, and Mr. DIXON.

SECOND SEMESTER.

2. Elements of Political Economy. Lectures, *M, W, F*, at 3. Quiz, *Tu*, Sec. I, at 11½; Sec. II, at 3; *Th*, Sec. III, at 11½; Sec. IV, at 3. Assistant Professor F. M. TAYLOR.
4. Principles of the Science of Finance. Lectures, *M, W, F*, at 2. Quiz, *M*, Sec. I, at 3; *W*, Sec. II, at 3; *F*, Sec. III, at 3. Professor ADAMS and Mr. DIXON.
6. The Transportation Problem. *Tu, Th*, at 11½. Professor ADAMS.
8. History and Theory of Socialism and Communism. *Tu, Th*, at 4. Assistant Professor F. M. TAYLOR.
10. History of the Tariff in the United States. Text-book: Taussig. *Tu, Th*, at 10½. Mr. DIXON.
12. History of Political Economy. Text-book: Ingram. *M, W*, at 10½. Mr. C. H. COOLEY.
Course 12, if taken by students who have passed Course 1, will be accepted as an equivalent for Course 2.
Courses 4, 6, 8, 10, and 12 must be preceded by Course 2.
16. Critical Examination of the Labor Problem and of the Monopoly Problem. *M*, at 8¼. Professor ADAMS.
18. Seminary in Economics. *M*, 9½-to 11½. Professor ADAMS.
20. Social Philosophy, with especial reference to economic relations. *Th*, at 8¼. Assistant Professor F. M. TAYLOR.
22. Current Economic Legislation and Literature. *Once in two weeks*. *W*, 7-9, P. M. Professor ADAMS, Assistant Professor F. M. TAYLOR, Mr. C. H. COOLEY, and Mr. DIXON.

INTERNATIONAL LAW.

FIRST SEMESTER.

1. Lectures on International Law. *Tu, Th*, at 2. President ANGELL.
Course 1 is open only to those who have completed two Courses in History; Course 7 is especially recommended as one of the two.

SECOND SEMESTER.

2. History of Treaties. *Tu, Th*, at 2. President ANGELL.
Course 2 must be preceded by Course 1.

MUSIC.

The Courses in Music are open to students who evince sufficient musical ability to pursue them with profit. Courses 1 and 2 are introductory to the technical and critical Courses. Courses 3 to 8 are technical and, with 1 and 2, represent four years' work. Course 11*a* is also technical. Courses 10*a* and 10*b* are intended primarily for graduate students, but are open to undergraduates who are fitted to do advanced work. Courses 9*a*, 9*b*, and 11*b* are open to students who wish to study the historical development of music, as well as its significance as an art.

FIRST SEMESTER.

1. Science and Practice of Choral Music. *Tu, Th*, at 5. Professor STANLEY.
3. Science of Harmony. *Tu, Th*, at 10½. Professor STANLEY.
- 5*a*. Simple Counterpoint. *Tu, Th*, at 11½. Professor STANLEY.
- 6*b*. Double Counterpoint. *Two hours credit. Hours arranged with instructor.* Professor STANLEY.
7. Canon. Fugue. Form. *Hours and credit arranged with instructor.* Professor STANLEY.
- 9*a*. The History of Music (to Modern Opera). Lectures. *W, F*, at 5. Professor STANLEY.
- 10*a*. Free Composition. Instrumentation. *Hours and credit arranged with instructor.* Professor STANLEY.
- 11*a*. Musical Analysis. Lectures and text-book. *W, F*, at 3. Professor STANLEY.

SECOND SEMESTER.

2. Science and Practice of Choral Music. *Tu, Th*, at 5. Professor STANLEY.
4. Science of Harmony. *Tu, Th*, at 10½. Professor STANLEY.
- 5*b*. Simple Counterpoint. *Tu, Th*, at 11½. Professor STANLEY.
- 6*b*. Double Counterpoint. Simple Forms. *Hours and credit arranged with instructor.* Professor STANLEY.
8. Canon. Fugue. Form. *Hours and credit arranged with instructor.* Professor STANLEY.
- 9*b*. The History of Music: Modern Music. Masterpieces. Lectures. *W, F*, at 5. Professor STANLEY.
- 10*b*. Free Composition. Instrumentation. *Hours and credit arranged with instructor.* Professor STANLEY.
- 11*b*. Musical Criticism. Lectures. *W, F*, at 3. Professor STANLEY.

BIBLIOGRAPHY.

FIRST SEMESTER.

During the month of October, Professor R. C. DAVIS gives, Monday at 7½, a course of lectures designed to aid readers in the use of the library, and in gaining a knowledge of recent books. These lectures do not count toward a degree.

SECOND SEMESTER.

1. Historical, Material, and Intellectual Bibliography. Lectures. *W*, at 3. Professor R. C. DAVIS.

MATHEMATICS.

Students of Engineering are required to take in order Courses 1, 2, 3, 4, 6. They are also required to take Course 1*b*, unless they have passed a satisfactory examination for admission in plane trigonometry; but no credit toward graduation is given to engineering students for Course 1*b*.

Other students may take in order Courses 1*a*, 2*a*, 3*a*, 4*a*. Of these, Course 1*a* is required for the degree of B.L.; 1*a* and 2*a* are required for the degrees of A.B., Ph.B., and B.S. Students who desire to give more time to mathematics may substitute Courses 1, 1*b*, 2, for the shorter Courses 1*a*, 2*a*; and Courses 3, 4, for the shorter Courses 3*a*, 4*a*.

Courses 1, 1*a*, 1*b*, 2, 2*a*, 2*b*, 3, 3*a*, 4, 4*a*, 6, are intended primarily for undergraduates; Courses 5, 7, 8, 10, 12, 15, 19, 20, are for graduates and undergraduates; Courses 9, 11, 13, 14, 16, 17, 18, are primarily for graduates, though undergraduates of exceptional ability are admitted by special permission.

FIRST SEMESTER.

1. Algebra and Analytic Geometry (I). *M, Tu, W, Th*, Secs. I, II, and III, at 4; Secs. IV, V, and VI, at 5. Secs. I and II, Mr. HALL. Sec. II, Mr. LYMAN. Secs. III and IV, Dr. METZLER. Sec. V, Dr. MARKLEY.
- 1*a*. Plane Trigonometry and Algebra. *Tu, W, F*, Secs. I, II, III, and IV, at 8¼. *M, Tu, F*, Secs. V and VI, at 9½. *M, W, Th*, Secs. VII and VIII, at 10½. *W, Th, F*, Secs. IX and X, at 11½. Secs. I and V, Dr. METZLER. Secs. II, VI, VIII, and X, Mr. LYMAN. Sec. III, Dr. MARKLEY. Secs. IV, VII, and IX, Mr. HALL.
- 1*b*. Plane Trigonometry. *Tu, Th*, Sec. I, at 2; Secs. II and III, at 3. Secs. I and II, Dr. MARKLEY. Sec. III, Dr. METZLER.
3. Differential and Integral Calculus (I). *M, Tu, W, Th, F*, Secs. I and II, at 3; Secs. III and IV, at 4. Secs. I and III, Assistant

Professor COLE. Sec. II, Assistant Professor ZIWET. Sec. IV, Dr. MARKLEY.

- 3a. Calculus (I). *M, Tu, W, Th*, at 3. Professor BEMAN.
5. Solid Analytic Geometry (I). *M, W*, at 2. Professor BEMAN.
6. Mechanics. *M, Tu, W, Th*, Sec. I, at 4; Sec. II, at 5. Assistant Professor ZIWET.
7. Modern Geometry (I). *M, W, F*, at 11½. Assistant Professor COLE.
9. Differential Equations (I). *M, Tu, Th*, at 4. Professor BEMAN.
11. Theory of Complex Numbers (I). *Three hours credit. Hours arranged with instructor.* Assistant Professor COLE.
13. Mathematical Reading. *Hours and credit arranged with instructor.* Course 13 is designed to give graduate students an opportunity to read standard mathematical works under the direction of the Faculty.
16. Advanced Mechanics (II). *Two hours credit. Hours arranged with instructor.* Assistant Professor ZIWET.
19. Teachers' Seminary. Algebra. *Tu, Th*, at 2. Professor BEMAN. Courses 19 and 20 are open only to those who have completed Courses 1, 2, 3, 4, or 1a, 2a, 3a, 4a.

SECOND SEMESTER.

2. Analytic Geometry (II). *M, Tu, W, Th*, Secs. I, II, and III, at 4; Secs. IV, V, and VI, at 5. Secs. I and IV, Mr. HALL. Sec. II, Mr. LYMAN. Secs. III and VI, Dr. METZLER. Sec. V, Dr. MARKLEY.
- 2a. Plane Analytic Geometry. *Tu, W, Th, F*, Secs. I, II, and III, at 8¼. *M, Tu, Th, F*, Secs. IV, V, and VI, at 9½. *M, Tu, W, Th*, Secs. VII and VIII, at 10½; Sec. IX, at 11½. Secs. I and IV, Assistant Professor ZIWET. Sec. II, Dr. MARKLEY. Secs. III, VI, and VII, Mr. LYMAN. Sec. V, Mr. HALL. Secs. VIII and IX, Dr. METZLER.
- 2b. Spherical Trigonometry. *Two hours credit. Hours arranged with instructor.* Mr. HALL.
4. Differential and Integral Calculus (II). *M, Tu, W, Th, F*, Secs. I and II, at 3; Secs. III and IV, at 4. Secs. I and III, Assistant Professor COLE. Sec. II, Assistant Professor ZIWET. Sec. IV, Dr. MARKLEY.
- 4a. Calculus (II). *M, Tu, W, Th*, at 3. Professor BEMAN.
8. Modern Geometry (II). *M, W*, at 11½. Assistant Professor COLE.
10. Quaternions. *Tu, W, Th*, at 5. Professor BEMAN.
12. Modern Higher Algebra. *Three hours credit. Hours arranged with instructor.* Dr. MARKLEY.

13. Mathematical Reading. *Hours and credit arranged with instructor.* See note to Course 13 in first semester.
14. Theory of Complex Numbers (II). *Two hours credit. Hours arranged with instructor.* Assistant Professor COLE.
15. Advanced Mechanics (I). *Three hours credit. Hours arranged with instructor.* Assistant Professor ZIWET.
17. Differential Equations (II). *M, W, at 4.* Professor BEMAN.
18. Solid Analytic Geometry (II). *Tu, Th, at 4.* Professor BEMAN.
20. Teachers' Seminary. Geometry. *M, W, at 2.* Professor BEMAN. See note to Course 19 in first semester.

PHYSICS.

FIRST SEMESTER.

1. Mechanics, Sound, and Light. *M, Tu, W, Th, F, at 11½.* Professor CARHART.
Course 1 is open to those who have passed an entrance examination in physics, and to all others who have sufficient preparation. A knowledge of plane trigonometry is indispensable.
3. Physical Laboratory work for beginners. This Course may be elected as 3*a*, *three times a week between 2 and 5*; or 3*b*, *twice a week between the same hours.* Mr. ROWE and Mr. REED.
Course 3 must be preceded by Course 1. It is also given in the second semester.
4. Primary and Secondary Batteries. Recitations, *once a week*; laboratory work, *once a week.* Professor CARHART and Mr. ROWE.
Course 4 must be preceded by Courses 1, 2, and 3*a* (or 3*b*) and a Course in General or Analytical Chemistry.
5. Electrical Units and Measurements. Lectures, *Tu, Th, at 2.* Professor CARHART. Laboratory work, *three times a week between 9½ and 12½, or between 2 and 5.* Assistant Professor PATTERSON and Mr. ROWE.
Course 5 must be preceded by Courses 1, 2, and 3*a* (or 3*b*).
6. Sound and Light. Everett's Vibratory Motion and Sound, *once a week*; laboratory work, *twice a week.* Mr. REED.
Course 6 must be preceded by Courses 1 and 3*a* (or 3*b*).
7. Mathematical Electricity: Mascart and Joubert. *Tu, Th, F, at 8¼.* Assistant Professor PATTERSON.
Course 7 must be preceded by Course 2; a knowledge of calculus is also required.
9. Distribution of Electricity and Photometry of Electric Lamps. Lectures, *Tu, Th, at 2*; laboratory work, *twice a week.* Assistant Professor PATTERSON and Mr. ROWE.

Course 9 must be preceded by Course 8a (or 8b).

13. The Alternate Current Transformer: Fleming. *M, W*, at 8¼. Professor CARHART.

Course 13 must be preceded by Course 8a (or 8b).

SECOND SEMESTER.

2. Electricity, Magnetism, and Heat. *M, Tu, W, Th, F*, at 11½. Professor CARHART.

Course 2 must be preceded by Course 1 and by a Course in General or Analytical Chemistry.

3. Physical Laboratory work for beginners. *Between 9½ and 12½ or 2 and 5*. Assistant Professor PATTERSON, Mr. ROWE, and Mr. REED.

See note to Course 3 in first semester.

8. Electro-Dynamic Machinery. This Course may be elected as 8a, lectures, *Tu, Th*, at 8¼; laboratory work, *Tu, Th*, 2-4; or 8b, lectures, *Tu, Th*, at 8¼; laboratory work, either *Tu* or *Th*, 2-4. Professor CARHART and Mr. ROWE.

Course 8 must be preceded by Courses 1, 2, 3a (or 3b), and 5.

10. Mathematical Electricity: Mascart and Joubert. Continuation of Course 7. *M, Tu, Th*, at 8¼. Assistant Professor PATTERSON. Course 10 must be preceded by Course 7.

11. Theory of Light: Preston. Recitations, *twice a week*. Professor CARHART. Laboratory work, *twice a week*. Mr. REED.

Course 11 must be preceded by Courses 1 and 6; a knowledge of calculus is also required.

12. Advanced work in Electricity and Magnetism. *Twice a week*. Mr. ROWE.

Course 12 must be preceded by Courses 1, 2, 3a (or 3b), and 5.

GENERAL CHEMISTRY.

Students who enter upon the study of chemistry with the intention of fitting themselves for teachers of the science, or who intend to acquire a scientific knowledge of the subject for other purposes, should take Courses 2 and 3 in addition to 1, 4, and 5. Course 10 and one or more Courses in Analytical and Organic Chemistry are recommended. The research laboratory is intended for graduate students, although advanced undergraduates may be admitted by special arrangement.

Morning hours are arranged for those who cannot take work in the afternoon.

FIRST SEMESTER.

1. Elementary Inorganic Chemistry, descriptive and experimental. Lectures and recitations. *M, W, F*, at 11½. Mr. HIGLEY.

2. Laboratory work in General Chemistry. *Three times a week, two hours a day, between 2 and 5.* Mr. LICHTY.
Course 2 must be preceded or accompanied by Course 1 or an equivalent. It is supplementary to Course 1 and covers in the laboratory the ground covered by lectures in Course 1.
3. Laboratory work in General Chemistry. *Five times a week, two hours a day, between 2 and 5.* Mr. LICHTY.
Course 3 must be preceded by Course 1. It may be counted as a Teachers' Course by students who have completed Course 4, and who also complete Course 1 in Analytical Chemistry.
5. Theoretical Chemistry of Recent Years. Lectures. *Tu, Th, at 8¼.* Professor FREER.
Course 5 must be preceded by Courses 4 and either 2 or 3 in General Chemistry, and by Courses 1, 4, and 10 in Analytical and Organic Chemistry. This course is intended for undergraduate students, but is also suitable for graduates. For the latter class of students the work will be lengthened to three times a week.
7. Laboratory Research in General Chemistry. *Hours and credit arranged with instructor.* Professor FREER.
Course 7 is intended primarily for graduate students. In any case it is limited to a small number of students, and is open only to persons who have completed a Course in organic preparations, who have a reading knowledge of German and French, and who receive special permission from the instructor.

SECOND SEMESTER.

2. Laboratory work in General Chemistry. *Three times a week, two hours a day, between 2 and 5.* Mr. HIGLEY.
See note to Course 2 in first semester.
- 2a. Laboratory work, continuation of Course 2. *Three times a week, two hours a day, between 2 and 5.* Mr. HIGLEY.
3. Laboratory work in General Chemistry. *Five times a week, two hours a day, between 2 and 5.* Mr. HIGLEY.
- 3a. Laboratory work, continuation of Course 3. After completing the regular work of this Course, students are given special advanced work, involving a simple inorganic investigation. *Five times a week, two hours a day, between 9 and 12, or 2 and 5.* Professor FREER and Mr. HIGLEY.
4. Inorganic Chemistry, descriptive and experimental. Lectures. *M, W, Th, F, at 11½.* Professor FREER.
Course 4 must be preceded by Course 1, or by an equivalent course of study in some other institution.
6. German Chemical Literature. *W, F, at 4.* Professor FREER.

Course 6 must be preceded by Course 5.

- 7a. Laboratory Research in General Chemistry. *Hours and credit arranged with instructor.* Professor FREER.

See note to Course 7 in first semester.

8. The Rarer Chemical Elements. Lectures, *Tu, Th*, at 4. Mr. HIGLEY. Course 8 is for graduates and undergraduates.

9. Laboratory Research in General Inorganic Chemistry, continuation of Course 3a. *Hours and credit arranged with instructors.* Professor FREER and Mr. HIGLEY.

Although Course 9 is intended primarily for undergraduates who have taken the regular Courses in laboratory instruction given in General Chemistry, it is also intended for graduate students who have received equivalent instruction elsewhere.

10. Laboratory work in the methods of determining molecular weights. *M, W, F, forenoons. Three hours credit.* Mr. LIGHTY.

Course 10 must be preceded by Course 5.

ANALYTICAL CHEMISTRY AND ORGANIC CHEMISTRY.

The laboratory work requires from two to three hours daily, taken, in the first semester, between 1 and 5; in the second semester, between 1 and 6. Permission for forenoon hours is given when necessary. The hours of class work, where not specified, are arranged with the respective instructors.

Those entering upon the study of Analytical Chemistry for scientific purposes irrespective of technical application, should first take Courses 1 or 3, and 4, and if possible should reach Course 17. In Organic Chemistry, Course 10, or Courses 10 and 11, should be taken first, and either Course 12 or Course 14 may be taken next. In Synthetic Research, Courses 10, 11, 12, 13, and 17 may be taken. For Commercial Analysis, Courses 10, 11, and 14 should be taken. For Metallurgical Analysis, Courses 1, 4, 5, 6, 7, and 9 are required. For Manufacturing Chemistry, Courses 1, 2, 4, 5, 10, 11, 14, 15, and 16, are advised. In preparation for Physiological Chemistry, Courses 1, 4, and 10 are recommended.

Courses 13, 17, 18, 19, 19a, 22, 23, 24, 25 are intended primarily for graduates and undergraduate students who have had somewhat extended training in chemistry. The permission of the instructor must be obtained before electing them.

FIRST SEMESTER.

1. Qualitative Analysis. Recitations, *M, Tu, W, Th, F*, Sec. I, at 8¼; Sec. II, at 9½; laboratory work, *daily. Ten hours credit.* Professor JOHNSON.
10. Organic Chemistry. Lectures and recitations. *M, Tu, W, Th, F*, at 10½. Professor PRESCOTT.

Course 10 is open to those who have taken Course 1 or Course 3 in Analytical Chemistry, or Course 1 in General Chemistry.

- [15. Outlines of Chemical Technology. Lectures. *One hour credit.* Professor JOHNSON.

Course 15 is open to those who have taken Course 1 or Course 3. It is not given in 1892-93.]

EITHER FIRST OR SECOND SEMESTER.

4. Qualitative Analysis. Beginning Course. Recitations, *Tu, Th*, at 11½; laboratory work, *five times a week.* *Seven hours credit.* Assistant Professor E. D. CAMPBELL.

Course 4 is open to those who have taken Course 1.

5. Advanced Quantitative Analysis. Laboratory work, *daily.* *Five hours credit.* Assistant Professor E. D. CAMPBELL.

Course 5 is open to those who have taken Course 4 and who receive special permission.

6. Iron and Steel Analysis. Laboratory work, *daily.* *Five hours credit.* Assistant Professor E. D. CAMPBELL.

Course 6 is open to those who have taken Course 4 and who receive special permission. It cannot be taken at the same time with Course 5.

7. Iron and Steel Analysis, continuation of Course 6. Laboratory work, *daily.* *Five hours credit.* Assistant Professor E. D. CAMPBELL.

11. Organic Chemistry. Laboratory work. *Two hours credit.* Professor PRESCOTT.

Course 11 is open to those who have taken Course 1 or Course 3. It must be preceded or accompanied by Course 10.

- 11a. Organic Chemistry. Laboratory work. Continuation of Course 11. *Two hours credit.* Professor PRESCOTT.

12. Organic Chemistry. Ultimate Analysis and Synthetic Preparations. Laboratory work. *Five hours credit.* Professor PRESCOTT.

Course 12 is open to those who have taken Courses 1, 4, and 10.

13. Organic Chemistry, continuation of Course 12. *Five hours credit.* Professor PRESCOTT.

17. Original Investigations in Organic Chemistry. Laboratory work, reading, and seminary studies. *Five hours credit.* Professor PRESCOTT.

18. Original Investigations, continuation of Course 17. *Five hours credit.* Professor PRESCOTT.

Courses 17 and 18 must be preceded by Courses 1, 4, and 10.

19. Organic Synthesis. Laboratory and library work with seminary studies. *Three hours credit.* Professor PRESCOTT.

- 19a. Organic Synthesis, continuation of Course 19. *Three hours credit.* Professor PRESCOTT.

- Courses 19 and 19a should be preceded by Courses 1 and 10.
22. Original Investigations in Qualitative Analysis and Applied Chemistry. Laboratory work. *Five hours credit.* Professor JOHNSON.
23. Original Investigations in Qualitative Analysis and Applied Chemistry. Laboratory work. *Three hours credit.* Professor JOHNSON.
- Courses 22 and 23 must be preceded by Courses 1 and 4.
24. Original Investigations in Qualitative Analysis and its applications. Laboratory work and reading. *Five hours credit.* Assistant Professor E. D. CAMPBELL.
- Course 24 must be preceded by Course 4 and by either 5 or 6.
25. Original Investigations in Qualitative Analysis and its applications. Laboratory work and reading. *Three hours credit.* Assistant Professor E. D. CAMPBELL.
- Course 25 must be preceded by Courses 4 and either 5 or 6.
26. Bibliography of Quantitative Analysis. Reading and seminary work. *One hour credit.* Assistant Professor E. D. CAMPBELL.
- Course 26 must be preceded or accompanied by one of the following Courses: 5, 6, 7, 9, 24, 25.
27. Bibliography of Quantitative Analysis. Reading and seminary work. *Two hours credit.* Assistant Professor E. D. CAMPBELL.
- Course 27 must be preceded or accompanied by one of the following Courses: 5, 6, 7, 9, 24, 25.

SECOND SEMESTER.

1. Qualitative Analysis. Recitations, *M, Tu, W, Th, F*, at 8¼; laboratory work, *daily.* *Ten hours credit.* Professor JOHNSON.
2. Advanced Qualitative Analysis, continuation of Course 1, with original work. Recitations, *W, F*, at 9½; laboratory work, *three times a week.* *Five hours credit.* Professor JOHNSON.
3. Qualitative Analysis. Recitations, *Tu, Th*, at 9½; laboratory work, *three times a week.* *Five hours credit.* Professor JOHNSON.
- Course 3 is a short Course, designed for students of civil and of mechanical engineering.
9. Technical Examination of Gold and Silver Ores, including the fire assay. Laboratory work with lectures. *Four hours credit.* Assistant Professor E. D. CAMPBELL.
- Course 9 must be preceded by Course 1 or Course 3 or by a Course in General Chemistry.
14. Organic Analysis. Lectures, *W*, at 10½; laboratory work, *four times a week.* *Five hours credit.* Professor PRESCOTT.
- Course 14 is open to those who have taken Courses 1 or 3, and 4 or 10.
16. Manufacture and Purification of Chemicals. Laboratory work. *Four hours credit.* Professor JOHNSON.

- Course 16 is open to those who have completed Courses 1 and 2.
20. Photography, including Photomicrography, Laboratory work. *Two hours credit.* Assistant Professor STEVENS.
- Course 20 must be preceded by Course 1 or Course 3, and by some additional Course in Chemistry or a Course in Physics.
- 20a. Photography. Laboratory work. *One hour credit.* Assistant Professor STEVENS.
- Course 20a is similar in character to Course 20, but is open only to students of civil engineering.
21. Technical Gas Analysis. Laboratory work. *One hour credit.* Assistant Professor E. D. CAMPBELL.
- Course 21 can be taken only by those who receive special permission.
22. Organic Chemistry. Lectures, *twice a week*; quiz, *once a week*. *M, Tu, Th*, at 9½. *Two hours credit.* Professor PRESCOTT.
- Course 22 must be preceded by Course 1 or Course 3 in Analytical Chemistry or by Course 1 in General Chemistry.

HYGIENE AND PHYSIOLOGICAL CHEMISTRY

FIRST SEMESTER.

1. Bacteriology. Lectures. *Three hours credit.* *Hours arranged with instructor.* Assistant Professor NOVY.

EITHER FIRST OR SECOND SEMESTER.

2. Bacteriology. Laboratory work, *daily for three months*, beginning the first week in October, January, and April. *Five hours credit.* Assistant Professor NOVY.
3. Methods of Hygiene, embracing the Analysis of Water, Air, Soil, Milk, Butter, etc. Laboratory work, *daily.* *Seven hours credit.* Assistant Professor NOVY.

Course 3 is open to those who have taken Course 1 or Course 3 in Analytical Chemistry.

4. Methods of Hygiene, continuation of Course 3 and of the same extent. Assistant Professor NOVY.
5. Physiological Chemistry, including Analysis of Urine. Lectures, *three times a week*; laboratory work, *daily.* *Seven hours credit.* Assistant Professor NOVY.

Course 5 is open to those who have taken Course 1 or Course 3 in Analytical Chemistry and Course 10 in Organic Chemistry.

6. Advanced Physiological Chemistry. Laboratory work and reading. *Seven hours credit.* Assistant Professor NOVY.

7. Original Research on the Causation of Disease. Laboratory work and reading. *Five hours credit.* Professor VAUGHAN.
Course 7 is designed for advanced students, and is open only to such as receive special permission.
8. Original Research on the Causation of Disease, continuation of Course 7 and of the same extent. Professor VAUGHAN.

ASTRONOMY.

FIRST SEMESTER.

1. General Astronomy. *Tu, F, at 5.* Professor HALL.
Course 1 requires a knowledge of conics.
5. Method of Least Squares and Empirical Curves. *W, F, at 10½.*
Mr. ALLOR,
Course 5 requires a knowledge of the integral calculus.
6. Theoretical Astronomy. *M, Tu, W, Th, F, at 4.* Professor HALL.
Course 6 should be preceded by Course 6 in Mathematics.

EITHER FIRST OR SECOND SEMESTER.

2. Elementary Practical Course. *One hour credit. Hour arranged with instructor.* Mr. ALLOR.
Course 2 requires a knowledge of trigonometry and general astronomy.
4. Spherical and Practical Astronomy. *Two hours credit. Hours arranged with instructor.* Mr. ALLOR.
Course 4 requires a knowledge of differential and integral calculus and of solid analytic geometry.
9. Extended Practical Course. *Hours and credit arranged with instructors.* Professor HALL and Mr. ALLOR.
Course 9 is open only to such students as receive special permission.

SECOND SEMESTER.

3. General Astronomy, continuation of Course 1. *M, W, at 4.* Professor HALL.
7. Theoretical Astronomy. *M, Tu, W, Th, F, at 5.* Professor HALL.
Course 7 should be preceded by Course 6 in Mathematics.
8. Eclipses, the Calendar, and the elements of Chronology. *W, F, at 10½.* Mr. ALLOR.
Course 8 requires a knowledge of spherical trigonometry and general astronomy.
11. Mathematical Theories of Planetary Motions. *Tu, Th, at 4.* Professor HALL.
Course 11 should be preceded by Course 6 in Mathematics.

MINERALOGY.

FIRST SEMESTER.

1. Short Course. Lectures and practice. Lectures, *M, F*, Sec. I, at 9½; Sec. II, at 10½; practice, *twice a week, at hours arranged with instructor. Two hours credit.* Professor PETTEE.
For Course 1 an elementary knowledge of chemistry is desirable.
- [3. Advanced Course. *Hours and credit arranged with instructor.* Professor PETTEE.
Course 3 must be preceded by Course 1, or by Course 2. It is not given in 1892-93.]

SECOND SEMESTER.

2. Mineralogy and Lithology. Lectures and practice. Lectures, *M, Tu, W, Th, F*, at 8¼; practice, *daily, at hours arranged with instructor. Five hours credit.* Professor PETTEE.
Course 2 is open only to those who are taking, or have taken, a Course in Analytical Chemistry.

GEOLOGY.

Courses 1 and 2 are intended primarily for undergraduates. Courses 3, 4, 5, 6, are for graduate students and undergraduates who have had sufficient preparation to pursue them with advantage.

FIRST SEMESTER.

1. Elements of General Geology, dynamical, lithological, and structural. Lectures and recitations. *M, W, F*, at 3. Professor RUSSELL.
5. Physical and Glacial Geology. *Tu, Th*, at 3. Professor RUSSELL.
Course 5 must be preceded by Courses 1 and 2, or an equivalent.
8. Economic Geology. *W, Th*, at 5. Professor PETTEE.
Course 8 must be preceded by Course 1 or 2 in Mineralogy.
- [9. Geology of the United States. *Tu, Th*, at 4. Professor PETTEE.
Course 9 is not given in 1892-93.]

SECOND SEMESTER.

2. Elements of Geology continued; historical geology and investigation of special problems. Lectures and recitations. *M, W, F*, at 3. Professor RUSSELL.
Course 2 must be preceded by Course 1 or an equivalent.
3. General Palæontology, Invertebrates. Reading, lectures, and lab-

oratory work. *Three hours credit. Hours arranged with instructor.*
Professor RUSSELL.

Course 3 requires a knowledge of the elements of general geology.

GENERAL BIOLOGY.

FIRST SEMESTER.

1. Elements of Biology. A study of typical species of plants and animals, with reference to structure, function, development, and relationship. Lectures, *M, W*, at $8\frac{1}{4}$; laboratory work in the morphological laboratory, *forenoons*; in the botanical laboratory, *afternoons*. *Five hours credit.* Mr. JOHNSON and Dr. WARD.

SECOND SEMESTER.

2. Elements of Biology, continuation of Course 1. Lectures, *M, W*, at $8\frac{1}{4}$; laboratory work in the morphological laboratory, *forenoons*; in the botanical laboratory, *afternoons*. *Five hours credit.* Mr. JOHNSON and Dr. WARD.

Course 2 must be preceded by Course 1.

SYSTEMATIC ZOÖLOGY.

FIRST SEMESTER.

1. Systematic Zoölogy, Vertebrates. Lectures and recitations. Text-book: Claus and Sedgwick. *M, Tu, W, Th, F*, at $8\frac{1}{4}$. Professor STEERE.
6. Development of Species and Theory of Classification. Lectures, *Tu, Th*, at $9\frac{1}{2}$. Professor STEERE.

EITHER FIRST OR SECOND SEMESTER.

4. Original or Independent work in Systematic Study of Vertebrates. This Course may be elected as *4a, two hours credit*, *4b, three hours credit*; or *4c, five hours credit*. *Hours arranged with instructor.* Professor STEERE.
Course 4 must be preceded by Courses 1 and 3.
5. Special Study of Invertebrate Groups. Laboratory work and reading with such instruction as the student may require. This Course may be elected as *5a, Conchology, three hours credit*; *5b, Study of Corals, three hours credit*; or *5c, Entomology, three hours credit*. *Hours arranged with instructor.* Professor STEERE.
Course 5 must be preceded by Course 2.

SECOND SEMESTER.

2. Systematic Zoölogy, Invertebrates. Lectures and recitations. Text-book: Claus and Sedgwick. *M, Tu, W, Th, F*, at 8¼. Professor STEERE.
 3. Identification of Vertebrates. Lectures and laboratory work. Lectures, *Tu, Th*, at 9½; laboratory work, *forenoons*. *Five hours credit*. Professor STEERE.
- Course 3 must be preceded by Course 1.

ANIMAL MORPHOLOGY

Course 1 is intended primarily for undergraduates; Course 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 are for graduates and undergraduates; Courses 12, 13, 14, 15, are primarily for graduates and undergraduates on the University system.

FIRST SEMESTER.

2. Morphology of Invertebrates. Lectures, with laboratory work or demonstrations. *Three hours credit. Hours arranged with instructor.* Dr WARD.
4. Mammalian Anatomy, including Histology. Lectures and recitations. *Tu, Th*, at 8¼; laboratory work, *hours arranged with instructor. Five hours credit.* Professor REIGHARD and Mr. KICKLAND.
6. Vertebrate Histology. Laboratory work with occasional lectures and recitations. *Two hours credit. Hours arranged with instructor.* Mr. KICKLAND.
8. Comparative Anatomy of Vertebrates. Lectures, *W, F*, at 8¼; laboratory work, *forenoons. Five hours credit.* Professor REIGHARD. Course 8 should be preceded by Courses 4 and 5.
10. Field-Club Work. The class will be organized for the purpose of studying the local fauna. *One hour credit.* Professor REIGHARD. Course 10 can be taken only after consultation with the instructor.
12. Current Literature of Animal Morphology. The class will constitute a Journal Club to meet once a week, for one or two hours, for reports on current papers and for discussions. *One hour credit.* Professor REIGHARD.
14. Original Work in Animal Morphology. This Course may be elected as 14a, *two hours credit*; 14b, *three hours credit*; 14c, *five hours credit*; or 14d, *ten hours credit.* Professor REIGHARD.

SECOND SEMESTER.

1. Elements of Biology of Animals. A study of typical species with reference to sturcture, function, development, and relationship.

- Lectures and laboratory work. Lecture, *M*, at 8¼; laboratory work, *forenoons*. *Three hours credit*. Dr. WARD.
3. Morphology of Invertebrates, continuation of Course 1. *Three hours credit. Hours arranged with instructor*. Dr. WARD.
 5. Mammalian Anatomy, including Histology. Lectures and recitations, *Tu, Th*, at 8¼; laboratory work, *hours arranged with instructor. Two hours credit*. Mr. KICKLAND.
 7. Vertebrate Histology, continuation of Course 6. *Two hours credit*. Mr. KICKLAND.
 9. Comparative Embryology of Vertebrates. Lectures, *W, F*, at 8¼; laboratory work (embryology of amphibia, chick, and rabbit), *forenoons. Five hours credit*. Professor REIGHARD.
- Course 9 should be preceded by Courses 4, 5, and 8.
11. Field-Club Work, continuation of Course 10. *One hour credit*. Professor REIGHARD.
- Course 11 can be taken only after consultation with the instructor.
13. Current Literature of Animal Morphology, continuation of Course 12. *One hour credit*. Professor REIGHARD.
 15. Original Work in Animal Morphology. This Course may be elected as 15*a*, *two hours credit*; 15*b*, *three hours credit*; 15*c*, *five hours credit*; or 15*d*, *ten hours credit*. Professor REIGHARD.

BOTANY.

Students who intend to take all the work offered in Botany will find it most advantageous to begin with Course 1 in General Biology. This should be followed by Course 2 in General Biology or the parallel Course 2 in Botany, then Courses 3 and 4, or 5 and 6, and so on.

Courses 1 and 2 and the corresponding Courses in General Biology are intended primarily for undergraduates; Courses 3, 4, 5, 5*a*, 6, and 6*a* are for graduates and undergraduates; Courses 7 and 8 are primarily for graduates, but undergraduates of exceptional ability may be admitted to them by special permission.

FIRST SEMESTER.

1. Elements of Biology of Plants. A study of typical species with reference to structure, function, development, and relationship. Lectures and laboratory work. Lecture, *W*, at 8¼; laboratory work, *afternoons*. Mr. JOHNSON.
- [3. Histology of Plants. Lectures and laboratory work. Course 3 is not given in 1892-93.]
5. Cryptogamic Botany. Lectures and laboratory work. Lectures, *W, F*, at 9½; laboratory work, 10½-12½. *Three hours credit*. Professor SPALDING.

- 5a. Continuation of Course 5. Laboratory work and reading. *Two hours credit. Hours arranged with instructor.* Professor SPALDING.
Course 5a is open only to those who receive special permission.
7. Investigations. Structure and Development of Fungi. This Course may be elected as 7a, *two hours credit*; 7b, *three hours credit*; or 7c, *five hours credit. Hours arranged with instructor.* Professor SPALDING.

SECOND SEMESTER.

2. Continuation of Course 1. Lectures and laboratory work. Lecture, *W*, at 8¼; laboratory work, *afternoons. Three hours credit.* Mr. JOHNSON.
- [4. Comparative Anatomy and Embryology of Phanerogams. Lectures and laboratory work.
Course 4 is not given in 1892-93.]
6. Morphology and Classification of Flowering Plants and the higher Cryptogams. Lectures and laboratory work. Lectures, *W, F*, at 9½; laboratory work, 10½-12½. *Three hours credit.* Professor SPALDING.
- 6a. Continuation of Course 6. Laboratory and field-work with reading. *Two hours credit. Hours arranged with instructor.* Professor SPALDING.
Course 6a is open only to those who receive special permission.
8. Investigations. Vegetable Physiology. This Course may be elected as 8a, *two hours credit*; 8b, *three hours credit*; or 8c, *five hours credit. Hours arranged with instructor.* Professor SPALDING.

PHYSIOLOGY.

The Courses in Physiology are arranged for those who intend to become physicians or dentists, those who propose to teach the subject, and those who contemplate making biology or psychology a specialty.

Instruction is given by lectures, recitations, informal discussions, and laboratory work. In the laboratory the student learns to use the apparatus and methods employed in ordinary physiological experiments. Advanced students are given an opportunity to begin research work

FIRST SEMESTER.

1. Lectures and recitations. Lectures, *M, Tu, W, Th*, at 9½; recitation, *F*, at 9½. Professor LOMBARD.
Course 1 should be preceded by Courses in Physics, in Chemistry, and in General Biology or Animal Morphology.

SECOND SEMESTER.

2. Continuation of Course 1. *Five hours credit. Hours arranged with instructor.* Professor LOMBARD.

3. Laboratory work. *W, Th, F, afternoons for six weeks. One hour credit.* Professor LOMBARD.
Course 3 is open only to students who have taken or are taking Course 2.
4. Physiological Experimentation. *One hour credit. Hour arranged with instructor.* Professor LOMBARD.
Course 4 is open only to those who have taken Course 3.

DRAWING.

In Courses 4, 7, 8, and 9, attendance in the drawing room on the days indicated is required for one hour in addition to the hour specified, and the hours of attendance should be consecutive, if possible.

FIRST SEMESTER.

1. Elementary Drawing. Practice. *Two hours credit.* Sec. I, *M, W, 2-4*; Professor J. B. DAVIS. Sec. II, *W, F, 10½-12½*; Sec. III, *M, W, F, 2-4.* Mr. MORLEY.
Sec. I is for students of civil engineering, Sec. II for students of electrical engineering, and Sec. III, which covers the last two-thirds of the semester, is intended for students of mechanical engineering who take Course 4 in Surveying in the first third of the semester.
3. Mechanical Drawing. *Tu, Th, F, 2-4. Three hours credit.* Professor J. B. DAVIS.
4. Free-hand Drawing; Pen and Ink Drawing; Sketching. *M, W, F, at 9½, 10½, or 11½. Three hours credit.* Professor DENISON or Miss HUNT.
9. Sketching of parts of machines. Lettering. *M, W, F, at 10½.* Professor DENISON.
Course 9 is designed especially for students of mechanical engineering.
10. Continuation of Course 8. *Two hours credit. Hours arranged with instructor.* Professor DENISON or Miss HUNT.
- [13. Water-Color Drawing. *Three hours credit. Hours arranged with instructor.* Professor DENISON or Miss HUNT.
Course 13 must be preceded by Course 8. It is not given in 1892-93.]

SECOND SEMESTER.

5. Descriptive Geometry. *Three hours credit.* Sec. I, recitations, *M, at 8¼; Tu, at 9½*; drawing, *W, 8¼-10½*; Professor J. B. DAVIS and Professor DENISON. Sec. II, recitations, *Tu, at 8¼; W, at 10½*; drawing, *M, 9½-11½*; Professor J. B. DAVIS and Professor DENISON. Sec. III, recitations, *W, at 8¼; Th, at 9½*; drawing, *F, 9½-11½*; Mr. MORLEY. Sec. IV, recitations, *Th,*

at $10\frac{1}{2}$; *F*, at $8\frac{1}{4}$; drawing, *W*, $10\frac{1}{2}$ – $12\frac{1}{2}$; Mr. MORLEY. Sec. V, recitations, *W*, at $9\frac{1}{2}$; *Th*, at $8\frac{1}{4}$; drawing, *F*, 4–6. Mr. MORLEY.

Course 5 must be preceded by Course 1. Sec. I is for students of civil engineering, Sec. II for students of electrical engineering, Sec. III for students of mechanical engineering, Secs. IV and V for others.

6. Shades, Shadows, and Perspective. *M, W, F*, $9\frac{1}{2}$ – $10\frac{1}{2}$; and such additional time as may be found necessary to complete the work. Three hours credit. Professor DENISON.

Course 6 must be preceded by Course 5.

7. Free-hand Drawing (advanced). *M, W, F*, at $10\frac{1}{2}$ or $11\frac{1}{2}$. Three hours credit. Professor DENISON or Miss HUNT.

8. Architectural and Water-Color Drawing. *Tu, Th*, at $10\frac{1}{2}$ or $11\frac{1}{2}$. Two hours credit. Professor DENISON or Miss HUNT.

Course 8 must be preceded by Course 1 or 4.

14. Stereotomy. *Tu, Th*, $9\frac{1}{2}$ – $10\frac{1}{2}$, and such additional time as may be found necessary to complete the work. Two hours credit. Professor DENISON.

Course 14 must be preceded by Course 5.

SURVEYING.

FIRST SEMESTER.

1. Lectures and field practice with instruments. *Tu, W, Th, F*, $8\frac{1}{4}$ – $12\frac{1}{2}$. Four hours credit. Professor J. B. DAVIS.

The field practice in Course 1 continues during favorable weather until Christmas.

4. Use of instruments. *M, W, F*, 2–4. One hour credit. Mr. MORLEY. Course 4 covers the first third of the semester and is for students of mechanical engineering who take Course 1 in Drawing in the last two-thirds of the semester.

5. Topography. Plane-table and Stadia. Field work and drawing. Field work, *M*, $8\frac{1}{4}$ – $12\frac{1}{2}$, *Tu, Th*, 2–4, to the Thanksgiving recess; drawing and lettering, *M*, $8\frac{1}{4}$ – $9\frac{1}{4}$, *Tu, Th*, 2–4, for the remainder of the semester, and such additional time as may be found necessary to complete the work. Three hours credit. Mr. MORLEY.

Course 5 accompanies Course 1.

SECOND SEMESTER.

2. Continuation of Course 1, including also railroad surveying, city engineering, and road-making. Lectures and text-book. *M, Tu, W, Th, F*, 2–6. Five hours credit. Professor J. B. DAVIS.

Course 2 must be preceded by Course 1.

3. Field work in camp. *Four weeks, six days each, 8-12 and 1-5.* Professor J. B. DAVIS.

Course 3 is open only to students that are working for a degree in civil engineering, except by special permission.

6. Continuation of Course 5. Phototopography. Field work and drawing. *W, 3-6, for the first two-thirds of the semester, and such additional time as may be found necessary to complete the work. One hour credit.* Mr. MORLEY.

It is desirable that Course 6 should be preceded or accompanied by Course 20a in Analytical Chemistry.

CIVIL ENGINEERING.

FIRST SEMESTER.

1. Principles of Mechanism; Drawing. *Tu, Th, 9½-11½. Two hours credit.* Professor DENISON.
4. Graphical Analysis of Structures. *Tu, Th, at 9½.* Professor GREENE.
Course 4 must be preceded by Course 3.
5. Strength and Resistance of Materials. *M, W, Sec. I, at 9½; Sec. II, at 10½. Sec. I is for students in civil engineering; Sec. II, for others.* Professor GREENE.

Course 5 must be preceded by Course 6 in Mathematics.

6. Engineering; Theory of Construction. *F, at 9½.* Professor GREENE.

Course 6 must be preceded by Course 6 in Mathematics.

7. Engineering Design. *M, Tu, W, Th, F, 2-5. Five hours credit.* Professor GREENE.

Course 7 accompanies Courses 5 and 6.

SECOND SEMESTER.

2. Dynamics of Machinery. *First half of semester. M, F, Sec. I, at 8¼; Sec. II at 11½. One hour credit.* Assistant Professor WAGNER.

Course 2 is the same as the first half of Course 7 in Mechanical Engineering.

3. Graphical Analysis of Structures. *M, W, Sec. I, at 10½; Tu, Th, Sec. II, at 10½. Sec. II is for students in civil engineering; Sec. I, for others.* Professor GREENE.

Course 3 requires at least a limited knowledge of statics.

8. Engineering; Theory of Construction. *M, Tu, Th, F, at 9½.* Professor GREENE.
9. Hydraulics. *W, at 9½.* Professor GREENE.
10. Water Supply and Sewerage. *F, at 10½.* Professor GREENE.

MECHANICAL ENGINEERING.

FIRST SEMESTER.

5. Principles of Mechanism; Drawing. *Tu, Th, 9½-11½, and additional time arranged with instructor. Three hours credit.* Professor DENISON.
Course 5 must be preceded by Course 1 or 1a in Mathematics, and by Courses 1 and 5 in Drawing.
- 6a. Design of Shop Machinery. For advanced students. *Two hours credit. Hours arranged with instructor.* Assistant Professor C. G. TAYLOR.
8. Prime Movers; Water Wheels and Steam Engines. Lectures, *Tu, Th, at 10½*; recitations, *Tu, Th, Sec I, at 10½*; Sec. II, at 11½. Professor M. E. COOLEY and Assistant Professor WAGNER.
Course 8 must be preceded by Course 7.
9. Thermodynamics; Hot-air and Gas Engines, Air Compressors and Refrigerating Machines. *Tu, Th, at 5.* Assistant Professor WAGNER.
Course 9 must be preceded by Course 7 and by Courses 1 and 2 in Physics.
10. Theory of Machine Design, including Electrical Design. *W, F, at 10½.* Professor M. E. COOLEY and Assistant Professor WAGNER.
Course 10 should be accompanied by Course 5 in Civil Engineering.
11. Design of General Machinery. *M, W, F, 2-5. Three hours credit.* Professor M. E. COOLEY.
Course 11 should be accompanied by Course 10.
15. Experimental Laboratory Work. *Tu, Th, 2-5. Two hours credit.* Professor M. E. COOLEY and Assistant Professor WAGNER.
Course 15 must be preceded by Course 7.

EITHER FIRST OR SECOND SEMESTER.

1. Shop Practice in Wood Work and in Pattern Work. This Course may be elected as—
1a, for beginners, *M, W, F, 9½-12½, three hours credit*;
or 1b, for advanced students, *three hours credit. Hours arranged with instructor.* Assistant Professor C. G. TAYLOR.
In the first semester the work in Course 1 is arranged especially for students of mechanical engineering; in the second semester for students of civil engineering.
2. Shop Practice in Forging. This Course may be elected as—
2a, for beginners, *Tu, Th, two hours each day, forenoon or afternoon, two hours credit*;

- or 2*b*, for advanced students, *two hours credit. Hours arranged with instructor.* Assistant Professor C. G. TAYLOR.
3. Shop Practice in Iron Work. This Course may be elected as—
3*a*, for beginners, *M, W, F, 9½-12½, three hours credit;*
or 3*b*, for advanced students, *three hours credit. Hours arranged with instructor.* Assistant Professor C. G. TAYLOR.
4. Shop Practice in Foundry Work. This Course may be elected as—
4*a*, for beginners, *Tu, Th, three hours each day, between 9½ and 12½ or between 2 and 6, two hours credit;*
or 4*b*, for advanced students, *two hours credit. Hours arranged with instructor.* Assistant Professor C. G. TAYLOR.

SECOND SEMESTER.

6. Design of Shop Machinery. *Tu, Th, 8¼-10½. Two hours credit.* Assistant Professor C. G. TAYLOR.
Course 6 must be preceded by Course 5, and by Courses 1 and 9 in Drawing.
7. Dynamics of Machinery. *M, W, Sec. I, at 8¼; Sec. II, at 11½.* Assistant Professor WAGNER.
Course 7 must be preceded by Course 6 in Mathematics, and by Course 1 in Physics.
12. Dynamics of Engines; Valve Gears. *M, W, at 10½.* Assistant Professor WAGNER.
Course 12 must be preceded by Course 8.
13. Machinery and Mill Work. *Tu, Th, at 10½.* Professor M. E. COOLEY.
14. Design of Engines and Boilers. *Tu, Th, 2-5. Two hours credit.* Professor M. E. COOLEY.
16. Steam Engineering; Steam Generators, Steam Pumping and Hoisting Machinery; Practical work in the laboratory. *Three hours credit. Hours arranged with instructors.* Professor M. E. COOLEY and Assistant Professor WAGNER.
Course 16 must be preceded by Course 8.

MARINE ENGINEERING.

Course 2 is designed for graduate students and undergraduates who have had the necessary preliminary training. Courses 1 and 3 are for graduates.

FIRST SEMESTER.

1. Naval Architecture.

SECOND SEMESTER.

2. Marine Engines. *M, Tu, Th, at 9½.* Professor M. E. COOLEY.
3. Ship-Building.

MINING ENGINEERING.**SECOND SEMESTER.**

- I. Mining. *M, Tu, W, Th, F*, at 11½. Professor PETTEE.

This Course is open only to those who are candidates for the degree of Bachelor of Science in Mining Engineering, and must be preceded by Course 2 in Mineralogy and Course 8 in Geology.

METALLURGY.**SECOND SEMESTER.**

- I. Fuel and Refractory Material, Iron, Steel, and Aluminum. *M, W, F*, at 11½. Assistant Professor E. D. CAMPBELL.

Course I must be preceded by Course I or by Course 3 in Analytical Chemistry, or by Course I in General Chemistry.

REQUIREMENTS FOR GRADUATION.**THE BACHELORS' DEGREES.**

[For the Higher Degrees, see the chapter on the Graduate School, page 116.]

The degree of Bachelor of Arts, Bachelor of Philosophy, Bachelor of Science, or Bachelor of Letters may be earned either on the credit system, or on the university system. A description of the latter is given on page 96. The requirements for graduation on the credit system are as follows:

GRADUATION ON THE CREDIT SYSTEM.

Under the credit system, the Faculty recommend for graduation students who have secured a stated number of *Hours of Credit*, according to the requirements specified below,—a part of the subjects being prescribed and a part being chosen by the student. An *Hour of Credit* is ordinarily given for the satisfactory completion of work equivalent to one exercise a week during one semester, whether in recitations, laboratory work, or lectures. Lectures and recitations are usually one hour in length; but in Courses of study that involve

laboratory work, drawing, or other practical exercises, a longer attendance than one hour at an exercise is required in order to secure an hour of credit.

THE DEGREE OF BACHELOR OF ARTS.

To obtain the recommendation of the Faculty for the degree of Bachelor of Arts, the student must secure *one hundred and twenty Hours of Credit*. The prescribed portion of this work is as follows:

In Greek: Courses 1, 2, 3, 4, and either 5*a* or 5*b*.

In Latin: Courses 1, 2, 3, 4.

In French: Courses 1, 2.

In English: Courses 1, 2.

In Philosophy: Course 1 or Course 2.

In Mathematics: Courses 1*a*, 2*a*, 3*a*, 4*a**.

But after a student has completed Courses 1, 2, 3 in Greek, 1, 2, in Latin, and 1*a*, 2*a*, or an equivalent, in Mathematics, he may, at his option, discontinue the study of any one of these three subjects. From the other Courses offered he must choose and complete enough to secure *one hundred and twenty Hours of Credit*.

THE DEGREE OF BACHELOR OF PHILOSOPHY.

To obtain the recommendation of the Faculty for the degree of Bachelor of Philosophy, the student must secure *one hundred and thirty Hours of Credit*. The prescribed portion of this work is as follows:

In Latin: Courses 1, 2, 3, 4.

In French: (*a*) for those who entered *without* French, sixteen hours, including Courses 1, 2;

or (*b*) for those who entered *with* French, eight hours of advanced work.

In German: (*a*) for those who entered *without* German, sixteen hours, including Course 1 and options in Courses 2, 3, 4;

or (*b*) for those who entered *with* German, eight hours taken from options in Courses 3, 4.

In English: Courses 1, 2.

In Philosophy: Course 1 or Course 2.

In Mathematics: Courses 1*a*, 2*a*, 3*a*, 4*a**.

But after a student has completed Courses 1, 2 in Latin, 1*a*, 2*a*, or an equivalent, in Mathematics, and eight hours in German (if he entered without German) or Courses 1 and 2 in French (if he entered without French), he may, at his option, discontinue the study of Latin, or Mathe-

* Instead of these Courses the student is permitted to take other Courses in Mathematics of equivalent amount.

matics, or the modern language (French or German) which he began in the University. From the other Courses offered he must choose and complete enough to secure in all *one hundred and thirty Hours of Credit*.

THE DEGREE OF BACHELOR OF SCIENCE (IN GENERAL SCIENCE).

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in General Science, the student must secure *one hundred and thirty Hours of Credit*. The prescribed portion of this work is as follows:

In French: (a) for those who entered *without* French, sixteen hours, including Courses 1, 2;

or (b) for those who entered *with* French, eight hours of advanced work.

In German: (a) for those who entered *without* German, sixteen hours, including Course 1 and options in Courses 2, 3, 4;

or (b) for those who entered *with* German, eight hours, taken from options in Courses 3, 4.

In English: Courses 1, 2.

In Philosophy: Course 1 or Course 2.

In Mathematics: Courses 1a, 2a, or an equivalent.

In Physics: Course 1.

In General Chemistry: Courses 1, 4.

In Zoölogy, in Botany, or in General Biology: five hours.

In Physical or Biological Sciences: twenty-five hours additional.

From the other Courses offered the student must choose and complete enough to secure in all *one hundred and thirty Hours of Credit*.

THE DEGREE OF BACHELOR OF SCIENCE (IN CHEMISTRY).

The requirements for the degree to be given on completion of the Course in Chemistry may be found on page 112.

THE DEGREE OF BACHELOR OF SCIENCE (IN BIOLOGY.)

The requirements for the degree to be given on completion of the Course in Biology may be found on page 114.

THE DEGREE OF BACHELOR OF SCIENCE (IN CIVIL, MECHANICAL, MINING, OR ELECTRICAL ENGINEERING).

The requirements for the degree to be given on completion of a Course in Engineering may be found on pages 108 to 111.

THE DEGREE OF BACHELOR OF LETTERS.

To obtain the recommendation of the Faculty for the degree of Bachelor of Letters, the student must secure *one hundred and thirty Hours of Credit*. The prescribed portion of this work is as follows:

In French: sixteen hours, including Courses 1, 2.

In German: sixteen hours, including Course 1 and options in Courses 2, 3, 4.

In English: Courses 1, 2, 3, 4.

In History: seven hours, including Courses 1, 7.

In Philosophy: Course 1 or Course 2.

In Mathematics: Course 1a.

But after a student has completed Courses 1, 2 in French and eight hours in German, he may, at his option, discontinue either of these two subjects. From the other Courses offered he must choose and complete enough to secure in all *one hundred and thirty Hours of Credit*.

GRADUATION ON THE UNIVERSITY SYSTEM

ADMISSION OF UNDERGRADUATES.

1. The privileges of the university system are open to undergraduates who have completed their second year of residence, and have also secured at least sixty Hours of Credit, including all the prescribed work—offered in the first two years—for some one of the Bachelors' degrees.

CONDITIONS FOR ENTERING UPON THE WORK.

2. Before beginning his work each undergraduate student must make application to the Registrar, and receive from him a certificate that he is entitled to enter upon the work. This application must be made before the student enters on the work of his third year of collegiate residence. In cases of exceptional character, however, the Faculty may grant permission to begin work on the university system at a later date.

NATURE OF THE WORK.

3. Students who are working on the university system are not held to the completion of a fixed number of hours of work, but are required to pursue three distinct lines of study, one *major study* and two *minor studies*, and, at the close of the work, to pass a special examination on those studies. The committee in charge of any undergraduate's work may, however, at their option, accept in lieu of the final examination in a minor study, approved work, in the line of that

study or germane to it, done on the credit system, equivalent to one-fourth of the amount of work remaining to be completed by the student before graduation, if he had continued on the credit system.

Members of the graduating class who have not more than thirty hours of work to complete in their last year of residence, are also allowed to take, in place of one half the amount remaining to be completed, a major study on the university system.

SUPERVISION OF THE WORK.

4. The work of students carrying on their studies under the university system is supervised by committees of the Faculty. The members of the committee in each case consist of the professors in charge of the student's work, the professor in charge of the major study being chairman. On making his application to the Registrar, each student will be directed to the proper committee.

ATTENDANCE.

5. Students on the university system are subject to all the rules of the Department relating to attendance and to examinations. No student can be excused from any work that he has once entered upon, nor from any examination, without the consent of the instructor in charge of the work. Examinations passed at the close of each semester on ordinary class work do not count as an equivalent or in abatement of the final examination to be passed for a degree, except as provided above in paragraph 3.

BACHELORS' DEGREES.

6. Undergraduates who have been enrolled as candidates under the university system for at least three semesters, may be admitted to a special examination for a Bachelors' degree at a date not earlier than the end of three and a half years of residence at the University. Before being recommended for any Bachelor's degree, however, they must have com-

pleted all the Courses prescribed for that degree. The examination will be conducted by the regular committee and such other persons as they may ask to assist them.

RULES AND REGULATIONS OF THE DEPARTMENT.

The following rules and regulations relate to admission conditions, election of studies, examinations, work in other departments, attendance, and discipline.

I. ADMISSION CONDITIONS.

All students are regarded as strictly on probation, until they have removed all conditions incurred in the examinations for admission to the Department. All such conditions must be removed during the year following the date of the examination. Students who have any admission conditions outstanding at the beginning of their second year of residence will not be allowed to join their classes until such conditions are removed.

II ELECTION OF STUDIES.

I. The maximum number of hours a week a student may elect without special permission of the Faculty is the following:

- During the first year, sixteen hours.
- During the second year, eighteen hours.
- During the third year, eighteen hours.
- During the fourth year, twenty hours.

In cases of exceptional proficiency additional hours are granted by the Faculty on especial request; but in all cases requests for permission to take an additional number of hours must be made in writing, and must be deposited in the Registrar's box on or before the *first Monday* of the semester during which the additional work is desired.

N.B. Students who are making up preparatory studies in the Ann Arbor High School are required to deduct the time spent in that school from the maximum number of hours allowed them in the University.

II. In their first year, students are recommended to make their elections in accordance with the following schemes. In cases where, for good reasons, it is not practicable to elect just sixteen hours a week, some smaller number may be chosen.

I. For Candidates for the degree of Bachelor of Arts:

First Semester: Greek, four hours; Latin, three hours; Mathematics, three hours; French, four hours; English, two hours.

Second Semester: Greek, four hours; Latin, four hours; Mathematics, four hours; French, four hours.

2. For Candidates for the degree of Bachelor of Philosophy:

First Semester: Latin, three hours; Mathematics, three hours; French and German, eight hours; English, two hours.

Second Semester: Latin, four hours; Mathematics, four hours; French and German, eight hours.

3. For Candidates for the degree of Bachelor of Letters:

First Semester: Mathematics, three hours; French, four hours; German, four hours; History, or other studies, five hours.

Second Semester: French, four hours; German, four hours, English, two hours; History, or other studies, six hours.

4. For Candidates for the degree of Bachelor of Science (in General Science, in Chemistry, and in Biology):

First Semester: Mathematics, three hours; French and German, eight hours; other studies, five hours.

Second Semester: Mathematics, four hours; French and German, eight hours; English, two hours; other studies, two hours.

5. For Candidates for the degree of Bachelor of Science (in Engineering):

a. In Civil Engineering:

First Semester: Mathematics, four hours; Mineralogy, two hours; Drawing, five hours; French, German, or other studies, five hours.

Second Semester: Mathematics, four hours; English, two hours; Drawing, three hours; French, German, or other studies, seven hours.

b. In Mechanical Engineering and in Electrical Engineering:

First Semester: Mathematics, four hours; Drawing, two hours; Mechanical Engineering, five hours; French, German, or other studies, five hours.

Second Semester: Mathematics, four hours; English, two hours; Drawing, three hours; French, German, Chemistry, or other studies, seven hours.

c. In Mining Engineering:

First Semester: Mathematics, three or four hours; Drawing, two or three hours; French, German, or other studies, sufficient to make a total of sixteen hours.

Second Semester: Mathematics, four hours; English, two hours; Drawing, three hours; French, German, or other studies, seven hours.

III. Except as provided in (I) and (II) each student may elect his studies and may pursue them in any order he may choose, subject only to the following restrictions:

a. Before entering on any study the student must give the professor in charge satisfactory evidence that he is prepared to pursue it with advantage.

b. If he is a candidate for a degree, he must at some time take all the studies "prescribed" for the degree he seeks.

c. No student will be allowed to elect merely a part of a Course without special permission of the Faculty.

d. No credit will be allowed to a student for work in any Course, unless the election of the work is formally made and reported to the Registrar before the work is begun.

e. After the second Monday of each semester no study can be taken up or dropped without special permission of the Faculty.

f. The Faculty will require a student to drop a part of his work at any time, if in their opinion he is undertaking too much; or to take additional work, if they think he is not sufficiently employed.

g. The Faculty reserve the right to withdraw the offer of any study not chosen by at least six persons.

IV. After matriculation a student cannot, without special permission of the Faculty, be admitted to examination in any one of the Courses given, until he has received in the University the regular instruction in such Course.

V. The student is urged to make his choice of studies with care, and with reference to some plan. The members of the Faculty will be ready to give advice and assistance in this regard.

III. EXAMINATIONS.

1. All students of this Department, whether candidates for a degree or not, if at work upon the credit system, are required to attend all the examinations in the Courses of study they pursue.

2. No student absent from any regular examination in any Course of study that he may have pursued, will be allowed to take such omitted examination before the next regular examination in that Course. In cases of great urgency, however, the Faculty may grant students special permission to be examined at an earlier date.

3. No student whose examination in any Course is reported as "*Incomplete*," will receive credit for that Course until after the examination has been completed. In case, however, the examination be not completed within one year, the unfinished course will be regarded and treated as "*Not Passed*."

4. Any student reported as passed "*Conditionally*" in any Course, must remove the condition within one year from the date of the examination in which it was incurred; otherwise, the Course passed conditionally will be regarded and treated as "*Not Passed*."

5. Any student reported as "*Not Passed*" in any Course, will receive no credit for that Course until he has again pursued it as a regular class exercise and has passed the regular examination in the same.

6. Any student detected in the use of illegitimate help at any examination, will be regarded as an *Absentee* from that examination, and will be treated as such.

IV. RELATION TO OTHER DEPARTMENTS.

1. Candidates for a degree in this Department of the University, who wish to pursue studies in any other Department, may be granted that privilege, provided they lack, at the beginning of the academic year, no more than twenty hours of graduation, and distribute their work in this Department as evenly as possible throughout the year.

2. All students admitted from other Departments of the University to the privileges of this Department are regarded in the class room as members of this Department, and are required to pass the regular examinations with the classes in which they are enrolled. Violations of this requirement will be deemed a forfeiture of the privileges of this Department; but this rule is not to be interpreted as applying to those who are permitted to attend lectures or other exercises without being enrolled.

V. ATTENDANCE AND DISCIPLINE.

The State of Michigan extends the privileges of the University without charge for tuition, to all persons of either sex, who are qualified for admission. Thus it does not receive patronage, but is itself the patron of those who seek its privileges and its honors. It cannot, however, be the patron of idleness or dissipation. Its crowded classes have no room except for those who assiduously pursue the studies of their choice, and are willing to be governed in their conduct by the rules of propriety.

Students not in their places at the opening of the semester must present written excuses from their parents or guardians for the delay.

Students are not allowed to absent themselves from town without permission of the President.

Such delinquencies as tardiness, absence, deficiencies, and offences against good order, in the several departments of instruction, are ordinarily dealt with by the instructor in charge of the department in which they occur. Flagrant cases are reported to the Faculty for adjudication.

Students are suspended or dismissed, whenever in the opinion of the Faculty they are pursuing a course of conduct seriously detrimental to themselves or to the University.

The following is a By-Law of the Regents:

"Whenever any Faculty is satisfied that a student is not fulfilling, or likely to fulfil, the purpose of his residence at the University, or is for any cause an unfit member thereof, the President shall notify his parents or guardians, that they may have an opportunity to withdraw him, and if not withdrawn within a reasonable time he shall be dismissed."

TECHNOLOGICAL AND PROFESSIONAL STUDIES.

The University has no School of Technology as a separate organization, but the Department of Literature, Science, and the Arts furnishes instruction in the branches ordinarily pursued in such a school. The engineering courses are to a large extent distinct from the other work of the Department. Special courses are arranged that lead to degrees in chemistry and in biology. Provision is also made for students who wish to prepare themselves as teachers, or to gain advanced standing in a professional school. A detailed description of the technological and professional courses is given below. The pharmaceutical courses are described in the chapter on the School of Pharmacy.

I. ENGINEERING.

The University offers to persons who wish to become professional engineers, thorough courses of study extending over about four years. In these courses of study, the aim of the University is to lay a foundation of sound theory, sufficiently broad and deep to enable its graduates to enter understandingly on the further investigation of the several specialties of the profession; and at the same time to impart such a knowledge of the usual professional practice as shall make its students useful in any position to which they may be called. While the adaptation of theory to practice can be thoroughly learned only by experience, there are many matters in which the routine work of an engineering field party, office, or drafting room can be carried out on a greater or less scale in a training school.

In **Civil Engineering** all the technical branches are under the direct care of those who have had professional experience as well as a full scientific training, and in all particulars the course embodies as close an imitation of the requirements of active labor as the instructors who have the several branches in charge can devise.

In **Mechanical Engineering** the course of study includes a wide range of special studies. Prominence is given to the study of steam engineering, and in this branch a large amount of practical work is done. The instruction is arranged to accommodate those who wish to devote their time principally to mechanical engineering proper, to steam engineering, or to marine engineering and naval architecture.

In **Mining Engineering and Metallurgy** the course of instruction, which is intended to cover about four years of study, includes a part of

that provided for students in civil and in mechanical engineering, though more especial attention is paid in the latter part of the course to mineralogy, geology, and chemistry. The instruction in the technical branches is arranged so as to meet the wants, both of those whose purpose it is to confine their professional work more closely to metallurgy, and of those who intend to engage in the practice of mining and metallurgy combined.

In **Electrical Engineering** the first three years of the course are nearly the same as in mechanical engineering. Besides the preliminary work in mathematics, language, drawing, and physics, instruction is given in pattern making, metal work, forging, and foundry work; and enough of the study of steam engines and other prime movers is included to meet the needs of the professional electrical engineer.

REQUIREMENTS FOR ADMISSION.

Candidates for a degree in any of the courses in engineering will be examined in the following subjects:—

1. **English Language.**—The same as for the degree of Bachelor of Arts (see page 34).

2. **Mathematics.**—*Algebra and Geometry.*—The same as for the degree of Bachelor of Arts (see page 35).

Trigonometry.—Plane Trigonometry as given in Olney's Elements of Trigonometry, or an equivalent in other authors. A candidate who has had no opportunity for preparation in Trigonometry may be admitted, if satisfactory examinations are passed in the other subjects, but he will be required to make up the deficiency by extra work in the university classes in that subject.

3. **History.**—The same as for the Course in General Science (see page 36).

4. **Physics.**—The same as for the degree of bachelor of Arts (see page 35).

5. **English Literature.**—The same as for the degree of Bachelor of Letters (see page 38).

6. **Chemistry, Geology, Zoölogy, Physiology, Physical Geography, and Astronomy.**—In any *two* of these subjects (see page 37).

Additional Requirement in 1895 and thereafter.

7. **French, German, and Latin.**—In 1895 and thereafter, candidates will be examined in *one* of the three languages, French, German, or Latin, the extent of the requirement in each case being the same as for the course in General Science (see page 36).

Students not candidates for a degree may be admitted to pursue such studies as they prefer, provided they are found prepared to join the classes in these studies. They will be expected to attend the lectures, recita-

tions, and examinations in the branches prescribed for the regular students, and will be required to take enough work to occupy them profitably,

COURSES OF INSTRUCTION.

The studies pursued in the earlier part of the course comprise in *Mathematics*, algebra, trigonometry, analytic geometry, and the elements of differential and integral calculus; in *French and German*, an amount covering in all about two years of study; in *English*, a course in higher English grammar and composition; in *Physics* and *Chemistry* the study of the elementary principles; and in *Drawing*, practice in geometrical and in mechanical drawing, and in the study of descriptive geometry.

The more technical subjects are taken up in the latter part of the course. Some of these subjects are of equal value to all classes of engineering students, such as analytical and applied mechanics, the strength and resistance of materials, and the metallurgy of the useful metals, especially iron and steel; others are adapted more particularly to the wants of the special students in the several courses. Their general scope may be seen from the following descriptive outline:

1. **Drawing.**—A very complete course in mechanical drawing is given, embracing plane projection drawing, isometric drawing, descriptive geometry, and the elementary principles of coloring and shading, with original problems executed in the drawing room. Examples from numerical data are always given when suited to the conditions of the problem in hand. Students in mechanical engineering are required to sketch pieces of machinery, and afterwards to make working drawings suitable for use in the shop. Problems peculiar to mining practice are also given. The plans of surveys, plane-table work, maps, designs in engineering construction, and the thesis drawings naturally come under this head. Instruction is also given in free-hand drawing, topographical drawing, ornamentation and lettering, shades and shadows, linear perspective, and drawing for stone cutting. The work in drawing occupies the student a part of almost every day throughout the course.

2. **Surveying.**—The work in surveying combines theory and practice. Lectures and text book work, in daily exercises, cover so much of one year as is not given to field work; the theory of instruments, and all the operations of surveying, laying out work, and computing, are explained in detail. Every student is afforded abundant opportunity for becoming familiar, by actual use, with the excellent and full assortment of instruments owned by the University, embracing those usually employed in actual work, and numbering enough to equip well the parties. The classes in surveying are drilled in all the field work that pertains to that branch of engineering; they make surveys, traverse them, calculate contents, divide areas, and solve problems in heights and distances from data taken by themselves.

They are given practice in every step of topographical surveying and drawing. They make surveys with the stadia, plane-table, photographic camera, and other instruments; they reduce the notes, develop and finish the pictures, plot the work, and make finished drawings of all field operations. They also determine the meridian, and take observations for latitude. This work is done during the fall months; the finished plans of the surveys are made during the winter.

The classes in railroad engineering have practice in running levels and curves of different kinds, and in the measurement of earth-work. In the month of June they are taken into the field as a railroad party for a space of four weeks continuously, where, under competent supervision, they go through all the field work for a projected line; doing all the work up to the point of actual construction, such as reconnoissance, preliminary and location survey, cross-sectioning, staking out, contouring, and topography. A plan and profile, carefully made in the field by the students from the notes of the party, complete this portion of the subject, and serve to fix the practical application of the principles obtained from the text-books and lectures. In the above work are usually included a plane-table survey, triangulation, and some hydrography when the selected locality is favorable.

The principal text-books used in this work are Johnson's Surveying, Searle's Field-Book for Engineers, and Rankine's Civil Engineering.

3. Strength and Resistance of Materials.—A course of recitations and lectures continuing through the first half-year is devoted to this subject, and is attended by all the engineering students. The action of the different materials under applied forces, the distribution of stress, and the proper proportions to be given to the different parts of structures in order that they may safely fulfil their several functions, are carefully studied.

4. Theory of Structures.—Roof and bridge trusses, in wood and iron, arches, in wood, iron, and stone, trestles, brick and stone masonry, foundations, tunnels, and, in general, the whole theory of structures are discussed. In this course, as in the preceding (3), Rankine's Civil Engineering is used as a text-book, supplemented by full explanations, additional notes, lectures, examples, and problems.

A complete course of instruction is also give in the graphical analysis of roof and bridge trusses and arches, as recently developed and applied. The student is made familiar with both the analytical and graphical methods of treatment and thus possesses ready proof of the accuracy of his calculations.

5. Hydraulics.—The law of the flow of water, through orifices and pipes and over weirs, the gauging of streams and rivers, the designing of works for water supply, drainage, and sewerage, the laying out of canals, and the subjects of river and harbor improvements are treated in this course.

6. Machinery, Prime Movers, and Millwork.—A course of instruction is given in mechanism, or the general principles of machinery, involving the study of gearing, screws, cranks, and levers, and the dynamics of machinery. In the study of prime movers, special attention is given to turbine and other water motors, and to steam engines. In the theory of machine construction, problems involving the strength and design of machines, and the materials used in their construction, and also involving the application of the principles of electricity, are studied at length, in connection with such examples as illustrate the best practice. The instruction in millwork covers the distribution of power and the arrangement of shafting and machinery in manufacturing establishments. Practical problems involving the strength of shafting, belting, and gearing are fully treated. Tests are made to determine the efficiency of machines, and the value of lubricants.

7. Designs in Engineering and in Machine Construction.—Contemporaneously with the study of theory students are required to work out problems in design. They are furnished with the usual data for a design, and the kind or type of structure or machine is indicated. They are then expected to make the necessary calculations, paying particular attention to proportioning the different parts so as to secure strength, simplicity, and effect, and to present at a specified date complete working drawings, giving full details, accompanied by bills of materials, estimates, and specifications.

8. A course in **Thermodynamics** embraces the study of the principles governing the action of heat engines in general, hot-air and gas engines, air compressors, compressed-air engines, and refrigerating apparatus.

9. Steam Engineering.—The work in this branch covers the practical use of steam. Furnaces and boilers are studied with reference to proper combustion of fuel, to securing maximum evaporative efficiency, and to proportioning the parts for strength, durability, and accessibility for cleaning and repairs. The care and management of engines and boilers, both in use and out of use, are fully considered. A study is made of the principal steam pumps and pumping engines. The practical application of steam to heating and ventilating purposes is treated by lectures, and by inspection of actual plants. Tests are made to determine the value of fuels, quality of steam, and the efficiency of furnaces, boilers, and engines.

10. Laboratory Work.—The laboratory work embraces experimental courses in the mechanical laboratory, and the practical courses in the various work shops. Instruction is given in the principles governing the action of cutting tools and the principal machines and hand tools used in the shop. Lectures are given on pattern making, moulding, and founding, covering the principal features of each.

The *Shop Practice* covers the application of principles previously

studied. It comprises the actual manipulation of the tools used in working metal and wood, and in moulding. The student is required to do work in pattern making and moulding in green sand, in dry sand, and in loam, and to charge and have the management of the cupola and brass furnace during the operations of casting. Careful attention is given to the operations of founding and to making composition metals for specific purposes. The student is also required to put in practice, at the blacksmith's forge, his knowledge of the elementary principles of forging, and to forge and temper his own cutting tools. By working with iron and steel of different qualities the student becomes familiar with all grades of those materials. Practice is also afforded in soldering, brazing, and steam-fitting.

11. Marine Engineering and Naval Architecture.—The instruction in this branch comprises the study of marine steam engines and propelling instruments, the hydraulics of ship-building, buoyancy, metacentre, stability and trim, weight and centre of gravity, waves and rolling, structural strength, speed and resistance, propulsion by sails and steam engines, laying-off and taking-off, and other topics.

12. Economic Geology.—Particular attention is paid to the geology of mines and mineral districts, and to the modes of occurrence and distribution of mineral substances that have an economic or commercial importance.

13. Mining.—In this branch the instruction is given mainly by lectures. The machines in use at the best mines are described, and the mutual relations of parts explained and illustrated with the aid of plates and diagrams. The different operations connected with the discovery, opening, development, and working of mines are all studied in their proper order.

14. Metallurgy.—A course of instruction by lectures and recitations is given upon the subjects of fuel, refractory material, iron and steel, silver, gold, and aluminum, extending over an entire year. The lectures are illustrated by charts and drawings of furnaces and appliances used, and by samples of furnace products.

15. Electrical Engineering.—The special electrical courses, additional to the elementary study of the subject, are devoted to primary and secondary generators, electrometallurgy, electrical units and methods of measurement, dynamo-electric machinery, the alternate current transformer, arc and glow lamps, photometry, and the distribution of electricity and transmission of power. In addition, elective courses in mathematical electricity are offered.

The laboratory work in electricity is devoted mainly to the testing of primary and secondary batteries, to practice in making electrical measurements of precision by all the best methods, to setting up dynamos, motors, and storage batteries and testing them for efficiency, to the

investigation of transformers for efficiency and for hysteresis curves, to photometry of both arc and glow lamps, and to special investigations connected with the preparation of a thesis.

16. Visits of Inspection.—As often as practicable, visits are paid to neighboring manufacturing establishments, and to electric light and electric power stations, for the purpose of acquiring a knowledge of the methods employed in building, in the construction of bridges, machinery, and ships, and the best practice in electrical manufacturing and engineering on a large scale.

FACILITIES FOR INSTRUCTION.

The collections for illustrating the instruction given comprise models, drawings, photographs, lithographs, and blue prints representing trusses, arches, and details of construction in iron, wood, and stone; also shapes of iron, working models of turbines and engines, and working drawings of a number of bridges. These collections are receiving additions from year to year, by gift and purchase, and are invaluable to the student.

Tests of engines and boilers, and of machinery in general, will be made on request, and the profit of such work devoted to extending the facilities of the engineering laboratory. The data of all experiments and tests made are kept in the laboratory records.

All the laboratory work is on a practical basis, and is done as nearly as possible as it would be done in any well arranged manufacturing establishment. There is also a large and convenient metallurgical laboratory connected with the chemical laboratory, amply supplied with assay furnaces and other appliances such as are usually found in laboratories of this description. The latest and best books on professional subjects are added yearly to the library, where they are accessible to all; and frequent references are made to them in the class room as the various subjects are brought forward.

EXAMINATIONS.

Examinations, usually in writing, are held at the end of each semester, but the classes are liable to be examined at any time, without notice, on any portion of their previous work.

REQUIREMENTS FOR GRADUATION.

Upon the completion of a prescribed course of study, amounting to one hundred and twenty-five Hours of Credit,* as given below, and the presentation of a satisfactory thesis, the student receives the degree of Bachelor of Science. The diploma given indicates the line of study pursued.

*For explanation of the term Hours of Credit, see page 93; and for further information in regard to the Courses prescribed for graduation, see pages 46 to 93.

Bachelors of Arts, of Philosophy, of Science, and of Letters, of this University, and graduates of any other reputable college, are recommended for the same degree with the regular students, after attendance on, and a satisfactory examination in, the technical subjects alone of the several courses. These subjects can be completed in two years. The culture imparted by classical or other liberal training will be found to have its uses for one engaged in engineering work, and the previous discipline of the faculties in exact research will enable the professional student to master more easily the requirements of the course. All the time the student can devote to general studies before taking up specialties will be well spent.

The requirements for the several degrees are as follows:—

1. *In Civil Engineering.*

To obtain the recommendation of the Faculty for the degree of Bachelor of Science, for a Course in Civil Engineering, the student must secure *one hundred and twenty-five Hours of Credit*. The prescribed portion of this work is as follows;

In French and German: twenty hours, to be selected by the student from all the Courses open to him in these two languages. (See pages 55 and 59.)

In English: Course 1.

In Mathematics: Courses 1, 2, 3, 4, 6.

In Physics: Course 1.

In General Chemistry: Course 1; or in Analytical Chemistry: Course 3.

In Mineralogy: Course 1.

In Astronomy: Course 4.

In Drawing: Courses 1, 4, 5, 6, 14.

In Surveying: Courses 1, 2, 3, 5, 6.

In Civil Engineering: Courses 1, 2, 3, 4, 5, 6, 7, 8, 9.

In Mechanical Engineering: Course 8.

From the other Courses offered the student must choose and complete enough to secure in all *one hundred and twenty-five Hours of Credit*. He must also prepare a satisfactory thesis.

2. *In Mechanical Engineering.*

To obtain the recommendation of the Faculty for the degree of Bachelor of Science, for a Course in Mechanical Engineering, the student must secure *one hundred and twenty-five Hours of Credit*. The prescribed portion of this work is as follows:

In French and German: twenty hours, to be selected by the student from all the Courses open to him in these two languages. (See pages 55 and 59.)

In English: Course 1.

In Mathematics: Courses 1, 2, 3, 4, 6.

In Physics: Courses 1, 2.

In General Chemistry: Course 1; or in Analytical Chemistry; Course 3.

In Drawing: Courses 1, 5, 6, 9.

In Surveying: Course 4.

In Civil Engineering: Courses 3, 5, 9.

In Mechanical Engineering: Courses 1a, 2a, 3a, 4a, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16.

In Metallurgy: Course 1.

From the other Courses offered the student must choose and complete enough to secure in all *one hundred and twenty-five Hours of Credit*. He must also prepare a satisfactory thesis.

3. *In Mining Engineering.*

To obtain the recommendation of the Faculty for the degree of Bachelor of Science, for a Course in Mining Engineering, the student must complete one of the two following sets of requirements:

I. MINING.

In French and German: twenty hours, to be selected by the student from all the Courses open to him in these two languages. (See pages 55 and 59.)

In English: Course 1.

In Mathematics: Courses 1, 2, 3, 4, 6.

In Physics: Course 1.

In General Chemistry: Course 1.

In Analytical Chemistry: Courses 1, 4, 9.

In Mineralogy: Course 2.

In Geology: Courses 8, 9.

In Drawing: Courses 1, 5.

In Surveying: Course 1.

In Civil Engineering: Courses 1, 2, 3, 5.

In Mechanical Engineering: Course 8.

In Mining Engineering: Course 1.

In Metallurgy: Course 1.

From the other Courses offered the student must choose and complete enough to secure in all *one hundred and twenty-five Hours of Credit*. He must also prepare a satisfactory thesis.

II. METALLURGY.

In French and German: twenty hours, to be selected by the student from all the Courses open to him in these two languages. (See pages 55 and 59.)

- In English: Course 1.
- In Mathematics: Courses 1a, 2a.
- In Physics: Course 1.
- In General Chemistry: Course 1.
- In Analytical Chemistry: Courses 1, 4, 6, 7, 9.
- In Mineralogy: Course 2.
- In Geology: Courses 8, 9.
- In Drawing: Courses 1, 5.
- In Mechanical Engineering: Courses 1a, 2a, 3a.
- In Mining Engineering: Course 1.
- In Metallurgy: Course 1.

From the other Courses offered the student must choose and complete enough to secure in all *one hundred and twenty-five Hours of Credit*. He must also prepare a satisfactory thesis.

4. *In Electrical Engineering.*

To obtain the recommendation of the Faculty for the Degree of Bachelor of Science, for a Course in Electrical Engineering, the student must secure *one hundred and twenty-five Hours of Credit*. The prescribed portion of this work is as follows:

- In French and German: twenty hours, to be selected by the student from all the Courses open to him in these two languages. (See pages 55 and 59.)
- In English: Course 1.
- In Mathematics: Courses 1, 2, 3, 4, 6.
- In Physics: Courses 1, 2, 3a, 4, 5, 8a, 9, 13.
- In General Chemistry: Course 1; or in Analytical Chemistry; Course 3.
- In Drawing: Courses 1, 5, 9.
- In Civil Engineering: Course 5.
- In Mechanical Engineering: Courses 1a, 2a, 3a, 4a, 5, 6, 7, 8.

From the other Courses offered the student must choose and complete enough to secure in all *one hundred and twenty-five Hours of Credit*. He must also prepare a satisfactory thesis.

REQUIREMENTS FOR THE DEGREE OF CIVIL ENGINEER, MECHANICAL ENGINEER, MINING ENGINEER, AND ELECTRICAL ENGINEER.

The conditions on which the degree of Civil Engineer, as a second degree, is conferred, are as follows:

The degree of Civil Engineer may be conferred upon Bachelors of Science of this University, who have taken the degree for a Course in Civil Engineering, if they furnish satisfactory evidence that they have pursued further technical studies for at least one year, and, in addition, have been

engaged in professional work, in positions of responsibility, for another year. The first of the above requirements may be satisfied by pursuing at the University, under the direction of the Faculty, a prescribed course of study for an amount of time, not necessarily consecutive, equivalent to a college year. If the candidate does not reside at the University, his course of study must be approved in advance by the professor of civil engineering, and he must prepare a satisfactory thesis on some engineering topic, to be presented, together with a detailed account of his professional work, one month, at least, before the date of the annual Commencement at which he expects to receive the degree.

The conditions on which the degree of Mechanical Engineer, Mining Engineer, and Electrical Engineer, as second degrees, are conferred upon Bachelors of Science of this University who have taken the degree for a Course in mechanical engineering, in mining engineering, or in electrical engineering, are analogous in character and in amount to those given above for the degree of Civil Engineer.

II. THE PROFESSIONAL STUDY OF CHEMISTRY.

A course of training is provided, extending through four college years, giving a practical preparation for the pursuit of an analytical and consulting chemist. The work is also adapted to the purpose of teaching or research in chemical science.

After devoting one year mainly to the French and German languages as a basis for their use in scientific literature, and to mathematics as a support for physics and chemistry, the student enters directly upon laboratory practice in chemistry, which extends through the remainder of the course. Qualitative analysis begins with the second year, and, usually, quantitative analysis is reached in the second semester of this year. Organic chemistry begins with the third year, in the first semester of which a study of theoretical chemistry is taken. Laboratory physics may be taken in the third year. The larger part of the fourth year is devoted to original research, both experimental and literary. Manufacturing chemistry is given in that year.

Candidates for the degree of Bachelor of Science in Chemistry are required to pass the same examinations for admission as candidates for the degree of Bachelor of Science in General Science. (See page 36.)

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Chemistry, the student must secure *one hundred and thirty Hours of Credit*. The prescribed portion of this work is as follows:

In French: (a) for those who entered *without* French, Courses 1, 2, 4; or (b) for those who entered *with* French, Course 4.

In German: (a) for those who entered *without* German, eight hours, including Course 1 and one option in Course 2; or (b) for those who

entered *with* German, five hours, taken from options in Courses 3, 4.

In English: Course 1.

In Mathematics: Courses 1a, 2a.

In Drawing: Course 3 or Course 4.

In Geology: Courses 1, 9.

In Physics: Course 1.

In General Chemistry: Courses 1, 4.

In General Chemistry: Course 7; or, in Analytical Chemistry: Course 17, 22, or 24.

In Analytical and Organic Chemistry: Courses 1, 4, 10, 11.

In Mineralogy: Course 2.

In Chemistry: additional, *twenty-five hours*.

From the other Courses offered the student must choose and complete enough to secure in all *one hundred and thirty Hours of Credit*. Among his elective studies he is recommended to take (a) Course 1 in Botany, (b) Course 3 in Physics, or (c) Course 1 in Metallurgy and Course 9 in Analytical Chemistry.

A Register of graduates and other former students engaged in practical chemistry, or as teachers of chemistry, has been published, and copies can be obtained by addressing the Director of the Chemical Laboratory.

III. SPECIAL COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGY.

This course of study has been provided for students who wish to devote their time largely to biological work, either as a preparation for the study of medicine or with a view to teaching or engaging in biological research.

In the first year, modern languages and mathematics, and in the second year, elementary physics and chemistry are required, as being absolutely essential to the successful prosecution of an extended course in science. Zoölogy, botany, and physiology are the most prominent subjects of the course, but full opportunity is given for extended work in physics, chemistry, palæontology, and other sciences. The laboratories of the University are provided with the necessary facilities not only for ordinary biological work, but for somewhat extended research, and every encouragement is given to students, especially in the last year, to devote themselves to original investigations.

Candidates for the degree of Bachelor of Science in Biology are required to pass the same examinations for admission as candidates for the degree of Bachelor of Science in General Science. (See page 36.)

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Biology, the student must secure *one hundred and thirty Hours of Credit*. The prescribed portion of this work is as follows:

In French: (a) for those who entered *without* French, eight hours;
or (b) for those who entered *with* French, four hours.

In German: (a) for those who entered *without* German, eight hours;
or (b) for those who entered *with* German, four hours.

In English: Course 1.

In Philosophy: Course 1 or Course 2.

In Mathematics: Courses 1a, 2a.

In Physics: Course 1.

In General Chemistry: Course 1.

In General Biology: Courses 1, 2.

In Biological work: additional, twenty-five hours.

From the other Courses offered the student must choose and complete enough to secure in all *one hundred and thirty Hours of Credit*.

Candidates for the degree of Bachelor of Science in Biology are strongly recommended to devote as much time as practicable in the early part of their course to the modern languages, mathematics, and the physical sciences. It is expected that they will arrange their work, not only in Biology, but in other subjects, in accordance with a definite plan fixed after conference with the instructors in charge.

IV. THE SCIENCE AND THE ART OF TEACHING.

The aims of the University in providing instruction in the Science and the Art of Teaching, are:

1. To fit University students for the higher positions in the public school service.

It is a natural function of the University, as the head of our system of public instruction, to supply the demand made upon it for furnishing the larger public schools with superintendents, principals, and assistants. Year by year these important positions are falling more and more into the hands of men that have received their education in the University. Till recently, the training given to our graduates has been almost purely literary; it has lacked the professional character that alone gives special fitness for the successful management of schools and school systems. Now, however, the University offers students that wish to become teachers ample facilities for professional study.

2. To promote the study of educational science.

The establishment of a chair of teaching is a recognition of the truth that the art of education has its correlative science; and that the processes of the school room can become rational only by developing and teaching the principles that underlie these processes. Systems of public instruction are everywhere on trial, and the final criteria by which they are to stand or fall must be found in a philosophical study of the educating art.

3. To teach the history of education, and of educational systems and doctrines.

The supreme right of the school is to grow; and much hurtful interference might be avoided by ascertaining the direction of educational progress and the history of educational thought.

4. To secure to teaching the rights, prerogatives, and advantages of a profession.

5. To give a more perfect unity to our State educational system by bringing the secondary schools into closer relations with the University.

THE TEACHERS' DIPLOMA.

The Teacher's Diploma is given to a student at the time of receiving a Bachelor's degree, provided he has completed three Courses of study offered by the professor of the science and the art of teaching, viz., Courses 1 and 2, and some three-hour Course, and, also, at least one of the Teachers' Courses offered by other professors, and by special examination has shown such marked proficiency in the Course chosen as qualifies him to give instruction. The Diploma is also given to a graduate student at the time of receiving a Master's or a Doctor's degree, provided he has pursued Teaching as a major or a minor study and has also taken a Teacher's Course in some other department.

TEACHER'S CERTIFICATE.

By authority of an act of the state legislature, passed in 1891, the Faculty of this Department give a Teacher's Certificate to any person who takes a Bachelor's, Master's, or Doctor's degree and also receives a Teacher's Diploma as provided above. By the terms of the act, the certificate given by the Faculty "shall serve as a legal certificate of qualification to teach in any of the schools of this State, when a copy thereof shall have been filed or recorded in the office of the legal examining officer or officers of the county township, city, or district"

V. COURSES PREPARATORY TO WORK IN THE PROFESSIONAL SCHOOLS.

In some of the subjects taught in this Department, the Courses offered are practically identical with those required for degrees in the professional schools. A student in this Department, by making a proper choice of electives, may thus qualify himself for advanced standing in professional study. For information in regard to the requirements for advanced standing in each case, students are referred to the Announcements of the several departments. If any student wishes to arrange his work in this Department in such a way as to secure admission to the third year in

medicine, he must make his intention known to the President as early as the beginning of his last year of undergraduate work and obtain special permission to be registered at that time as a student in medicine.

THE GRADUATE SCHOOL.*

The Graduate School has been established for the purpose of bringing into greater prominence the numerous advanced courses of instruction that have been developed from the continual extension of the elective system; of securing a more efficient and systematic administration of this higher work; and of providing as far as possible for the separate instruction of graduate students. The school is organized within the Department of Literature, Science, and the Arts, and its management is entrusted to an Administrative Council, chosen from the Faculty of the Department. For the year 1892-93 the Administrative Council consists of the President of the University, together with the heads of departments of instruction.

ADMISSION AND REGISTRATION.

All applicants for admission to the Graduate School must first report to the President and present their credentials.

The privileges of the school are open to graduates of the Department of Literature, Science, and the Arts of this University, and to graduates of other universities and colleges, who satisfy the Administrative Council that they are qualified to pursue with profit the advanced courses of study offered in the school.

Graduates of institutions, where the undergraduate courses of study are not substantially equivalent to the course prescribed at this University, will ordinarily be required to do an additional amount of undergraduate work, or to prolong their term of residence, before being admitted to full candidacy for a higher degree.

Graduates of this University, or of other institutions, who do not wish to become candidates for a degree, may be admitted and registered as special resident graduates.

*A special Announcement of the Graduate School was issued in the summer of 1892. Copies of this Announcement can be had by addressing Mr. JAMES H. WADE, Steward of the University

Graduates of other institutions who are candidates for a bachelor's degree in this Department of the University are not registered in the Graduate School.

COURSE OF INSTRUCTION.

The courses of instruction offered in this Department, are enumerated and described on pages 46 to 93. In all branches of study provision is made for the instruction of graduate students. Graduate students who do not wish to work for a degree, are admitted to any of these Courses upon satisfying the professor in charge that they are qualified to pursue the work to advantage.

The work of candidates for a higher degree is not confined strictly to the Courses named on the preceding pages. Each student chooses three lines of study, a major study and two minor studies, which, after approval by the Council, he pursues under the immediate supervision of a special committee, consisting of the professors in charge of the studies chosen, the professor in charge of the major study being chairman. The nature of the work prescribed, and of the committee's oversight, varies in different cases according to the subjects chosen, the degree sought, and the previous attainments of the student. The work may consist of attendance upon certain specified Courses, or of reading to be done privately and reported upon, or of an original research to be carried on more or less independently. In general, the method followed is that of the so-called university system, described on page 96, with such modifications as circumstances may make advisable. The essential features of this system are specialization of study, a final examination, and a thesis. A thesis is always required of a candidate for a doctor's degree; for a master's degree, the requirement may be waived at the discretion of the committee in charge of the student's work. The final examination for a degree is conducted under the direction of the committee, and the result of the examination is reported to the Faculty of the Department.

DEGREES CONFERRED.

The higher degrees conferred are those of Master of Arts, Master of Science, Master of Philosophy, Master of Letters, Doctor of Philosophy, Doctor of Science, Doctor of Letters, Civil Engineer, Mechanical Engineer, Mining Engineer, and Electrical Engineer.

THE MASTERS' DEGREES.

The Masters' degrees are open to Bachelors of Arts, Science, Philosophy, or Letters, of this University, or any other reputable university or college; a residence of at least one year at the University is required, except as stated below.

Residents.—Students who have received a Bachelor's degree at this University, or at any other reputable university or college, may be recommended for the corresponding Master's degree after completing the prescribed term of residence at this University, and passing an examination on their course of study as approved by the Administrative Council. A thesis may, or may not, be included in the requirements for the degree, as the committee in charge of the student's work may determine.

Students properly qualified may be permitted to pursue at the same time studies for a Master's degree, and studies in any of the professional schools, on condition that the term of study and residence in this Department be extended to cover at least two years.

Non-Residents.—A Bachelor of Arts, Bachelor of Science, Bachelor of Philosophy, or Bachelor of Letters, of this University, may be recommended for the corresponding Master's degree, without residence at the University, provided he spends at least two years on a course of study approved by the Council, and passes the required examinations, with or without a thesis, as the committee may determine. *This privilege is restricted to graduates of this University, and is to be withdrawn at the close of the current academic year; but candidates already accepted will be allowed to finish their work.* Every candidate is required to present a report of progress at least once in each semester to the chairman of the committee in charge of his work; failure on the part of any candidate to make such report is regarded as indicating a purpose to withdraw from his candidacy.

THE DOCTORS' DEGREES.

1. The Doctors' degrees are conferred only on persons who have previously received a Bachelor's degree, either here or at some other reputable university or college, and also during residence here have made special proficiency in some one branch of study, and good attainments in two other branches, and have presented a thesis that shall evince the power of research and of independent investigation. It is not intended that the Doctors' degrees shall be won merely by faithful and industrious work for a prescribed time in some assigned course of study, and no definite term of required residence can be specified; but it is the practice of the University to require at least one full year of residence of candidates that have already earned a Master's degree, and at least two full years of candidates that have previously taken a Bachelor's degree.

2. The degree of Doctor of Philosophy is open to persons that have received the degree of Bachelor of Arts, or of Bachelor of Philosophy; the degree of Doctor of Science to persons that have received the degree of Bachelor of Science; and the degree of Doctor of Letters to persons that have received the degree of Bachelor of Letters.

THE DEGREES OF CIVIL ENGINEER, MECHANICAL ENGINEER, MINING ENGINEER, AND ELECTRICAL ENGINEER.

The requirements for these degrees may be found on page 111.

SPECIAL REGULATIONS RELATING TO THE HIGHER DEGREES.

1. Applicants for an advanced degree, whether resident or non-resident, are required to announce to the Council, through the President, as early as the fifteenth of October of each year, the particular branches of study to which they wish to give special attention. The supervision of their work will then be entrusted to the proper committee.

2. The subject of the thesis must be announced to the President as early as the first of December of the college year in which the applicant expects to take the degree.

3. It is required in the case of a resident applicant that, so far as the resources of the University permit, the thesis be upon a subject requiring research. The thesis of a non-resident applicant must also be upon a subject requiring independent research, if possible.

4. The thesis must be completed and put into the hands of the chairman of the proper committee as early the first of May of the year in which the applicant expects to take the degree.

5. The thesis must be prepared for close scrutiny with reference not only to its technical merits, but also to its merits as a specimen of literary workmanship. It must be preceded by an analytical table of contents, and a carefully prepared account of the authorities made use of.

6. The thesis must be read and defended in public at such time as the Council may appoint; and, in case of a Master's degree, a bound copy, either written or printed, must be deposited in the University library.

7. Candidates for the degree of Doctor of Philosophy, Doctor of Science, or Doctor of Letters, in case of the acceptance of their theses, are also required to have the accepted theses printed, and to present twenty-five copies of the same to the University library, unless by special vote of the Council a smaller number is deemed sufficient.

FELLOWSHIPS AND SCHOLARSHIPS.

Except for the Elisha Jones Classical Fellowship, the University has no funds available for fellowships or scholarships; but the collection of a fellowship fund has been begun by the Alumni Association of the Department, and a scholarship has been established by the alumni of the Detroit High School.

THE ELISHA JONES CLASSICAL FELLOWSHIP.

In 1889, the Elisha Jones Classical Fellowship was established by Mrs. Catherine E. Jones, in memory of her husband, Professor Elisha Jones, a graduate of this University in the class of 1859, and for many years a member of the Faculty of the Department of Literature, Science, and the Arts.

The Fellowship has at present an income of \$500 a year. Its purpose is "to encourage patient, honest, accurate study of the languages, literature, and archæology of ancient Greece and Rome."

A candidate for this Fellowship must have spent at least three entire semesters as a student in this Department of the University and must be a Bachelor of Arts of this University, of not more than two years' standing. Appointments to the Fellowship are made by an Examining Board, consisting of President ANGELL and Professors D'OOGHE, KELSEY, WALTER, and HUDSON. The period of incumbency is limited to two academic years, and must be spent at this University "unless at any time the examining board shall see fit to allow the second year to be spent" at some other place favorable to classical study.

The present holder of the Fellowship is Clarence Linton Meader, A.B.

FEES AND EXPENSES.*

Matriculation Fee.—For Michigan students, *ten dollars*; for all others, *twenty-five dollars*.

Annual Fee.—For Michigan students, *twenty dollars*; for all others, *thirty dollars*.

Diploma Fee.—For all alike, *ten dollars*. A fee of *one dollar* is charged for the Teacher's Diploma.

For information in regard to laboratory fees and other expenses, see pages 29 and 30.

*The Matriculation Fee and the Annual Fee must be paid in advance. No portion of the fees can be refunded, except by order of the Board of Regents, to students who leave the University during the academic year.

Department of Medicine and Surgery

A special Announcement giving further information in regard to this Department is published annually. For copies of this Announcement or for other information relating to the Department, address Dr. William A. Campbell, Secretary of the Faculty, Ann Arbor, Michigan.

THE Department of Medicine and Surgery was the first professional school established in the University. Provision was made for it in the legislative act by which the University was organized in 1837, and it was opened for students in 1850. The college year was lengthened from six to nine months in 1877; and the course was lengthened to three years in 1880 and to four years in 1890.

The college year extends from the first day of October to the Thursday following the last Wednesday in June. The lectures continue till the middle of June. The examinations are then begun and concluded in time for the Commencement exercises.

REQUIREMENTS FOR ADMISSION,

Every candidate for admission to the Department of Medicine and Surgery must be eighteen years of age, and must present to the Faculty satisfactory evidence of a good moral character.

Women are admitted, as to all other departments of the University, on the same conditions as men.

Matriculates in a regular course in the Department of Literature, Science, and the Arts (page 33), graduates of literary colleges of good

standing, graduates of approved diploma schools,* and of other high schools of equal standing, are admitted without examination on presentation of proper evidence to the Secretary of the Faculty. For all others the requirements for admission are as follows:

1. **English.**—An essay of not less than two pages (foolscap), correct in spelling, punctuation, capital letters, grammar, and paragraphing.

2. **Mathematics.**—*Arithmetic.*—Fundamental Rules, Fractions (common and decimal), Denominate Numbers, Percentage, Proportion, Involution and Evolution, and the Metric System of Weights and Measures.

Algebra.—Fundamental Rules, Fractions, Equations of the First Degree containing two or more unknown quantities.

Geometry.—Plane Geometry.

3. **Physics.**—An amount represented by Avery's Natural Philosophy, or Gage's Introduction to Physical Science.

4. **Botany.**—The elements of Vegetable Anatomy and Physiology as given in Gray's Lessons.

5. **Zoology.**—Packard's Zoölogy, briefer course.

6. **Physiology.**—Martin's The Human Body, briefer course.

7. **History.**—Myers's General History, or an equivalent; and Higginson's, or Johnston's, History of the United States.

8. **Latin.**—Jones's First Latin Book, or Harkness's Latin Reader, or an equivalent amount in any other text-book. An applicant who is not prepared to pass the examination in Latin, may take a condition in this subject, which condition he must remove before entering on the work of the second year.

The examination for admission will be held at 2 P. M., Friday, September 29, 1893. Candidates are required to present themselves at this time as they are expected to be in attendance on the first day of the term, when the regular course of instruction begins. To provide for cases in which it is absolutely impossible for the candidate to be present at the time announced, supplementary examinations will be held at such times as may be determined upon by the Faculty, but no excuse, except of an urgent character, will be accepted for failure to appear at the first examination.

Before admission to examination every student is required to present to the Secretary of the Faculty the Treasurer's receipt for the payment of the matriculation fee and the annual fee. It will, therefore, be necessary for the candidate to apply first to the Steward at his office in University Hall, register his name as a student in the Department of Medicine and Surgery, and pay his fees to the Treasurer. In case of rejection, the money paid preliminary to examination will be refunded.

*The diploma schools comprise all those approved by the Faculty of the Department of Literature, Science, and the Arts. For a list of these, see page 43.

ADMISSION TO ADVANCED STANDING.

Persons who have studied medicine elsewhere for one year may be admitted to advanced standing after having passed a satisfactory examination on all the studies which have already been pursued by the class to which they seek admission.

COURSE OF INSTRUCTION.

The Course of Instruction covers four years of nine months each. The first two years are devoted to the more strictly scientific work which serves as a basis for the technical and clinical studies which follow. The forenoons are given to lectures and recitations, three each day; the afternoons to laboratory drill during the first two years, and to the study of methods of diagnosis and means of treatment during the second two years. Four hours constitute a day's work in the laboratory and hospital.

INSTRUCTION FOR WOMEN.

The course of instruction for women is in all respects equal to that for men. Practical Anatomy is pursued by the two sexes in separate rooms, and some of the lectures and demonstrations, which it is not desirable to present to the two sexes together, are given to them separately; but in most of the lectures, in public clinics, in the several laboratories, and in various class exercises, it is found that both sexes may attend with propriety at the same time.

SCHEDULE OF STUDIES.

FIRST YEAR

LECTURES AND RECITATIONS IN FIRST SEMESTER.

<i>Subjects.</i>	<i>Hours Required Each Week.</i>
Osteology and Descriptive Anatomy,	5
General Chemistry,	5
Bacteriology,	4

LECTURES AND RECITATIONS IN SECOND SEMESTER.

<i>Subjects.</i>	<i>Hours Required Each Week.</i>
Descriptive Anatomy,	5
Physics,	4
Organic Chemistry,	3
Histology,	3

LABORATORY WORK IN THE FIRST YEAR.

<i>Subjects.</i>	<i>Time Required.</i>
Anatomy,	Every day for twelve weeks.
Chemistry,	Every day for twelve weeks.
Bacteriology,	Every day for twelve weeks.

SECOND YEAR.

LECTURES AND RECITATIONS IN FIRST SEMESTER.

<i>Subjects.</i>	<i>Hours Required Each Week.</i>
Anatomy,	5
Physiology,	5
Hygiene,	3
Embryology,	2

LECTURES AND RECITATIONS IN SECOND SEMESTER.

<i>Subjects.</i>	<i>Hours Required Each Week.</i>
Anatomy,	5
Physiology,	5
Physiological Chemistry,	3
Hygiene,	2

LABORATORY WORK IN THE SECOND YEAR.

<i>Subjects.</i>	<i>Time Required.</i>
Anatomy,	Every day for twelve weeks.
Physiological Chemistry,	Every day for twelve weeks.
Histology,	Every day for six weeks.
Electrotherapeutics,	Every day for six weeks.

THIRD YEAR.

LECTURES AND RECITATIONS IN FIRST AND SECOND SEMESTERS.

<i>Subjects.</i>	<i>Hours Required Each Week.</i>
Theory and Practice,	2
Surgery,	3
Obstetrics and Gynæcology,	3
Materia Medica and Therapeutics,	5
Pathological Histology,	1
Nervous Diseases,	1

DEMONSTRATION COURSES IN THE THIRD YEAR.

<i>Subjects.</i>	<i>Time Required.</i>
Pathology,	Every day for six weeks.
Clinical Medicine,	Every day for six weeks.

Nervous Diseases,	Every day for six weeks.
Operative and Minor Surgery,	Every day for six weeks.
Obstetrics and Gynæcology,	Every day for six weeks.
Ophthalmology, Otology, and Laryngology,	Every day for six weeks.

CLINICAL COURSES IN THE THIRD YEAR.

<i>Subjects.</i>	<i>Hours Required Each Week.</i>
Internal Medicine,	2
Surgery,	2
Gynæcology,	2
Ophthalmology,	2
Nervous Diseases,	1

FOURTH YEAR.

LECTURES AND RECITATIONS IN THE FOURTH YEAR.

<i>Subject.</i>	<i>Hours Required Each Week.</i>
Theory and Practice,	3
Surgery,	3
Obstetrics and Gynæcology,	3
Diseases of Nervous System,	2
Dermatology and Syphilography,	2
Ophthalmology, Otology, and Laryngology,	1
Pathology,	1

CLINICAL COURSES IN THE FOURTH YEAR.

<i>Subjects</i>	<i>Hours Required Each Week.</i>
Internal Medicine,	2
Surgery,	2
Obstetrics and Gynæcology,	2
Dermatology and Syphilography,	2
Ophthalmology, Otology, and Laryngology,	2
Diseases of Nervous System,	1

BEDSIDE AND DISPENSARY INSTRUCTION.

Students in the fourth year are given charge of patients, required to make diagnoses, prescribe, dress wounds, and make minor operations under the eye of the professor in charge. A lying-in-ward furnishes obstetrical cases, which are attended by senior students in rotation.

EXAMINATIONS.

Examinations (written, oral, or both written and oral) are held at the close of each course or semester. Students "*conditioned*" cannot apply for another examination in the same subject until the close of the next

course or semester, except that a student conditioned at the close of the college year may ask for another examination in the first two weeks of the following year. Students reported "*not passed*," are required to take the course over again before applying for re-examination. Candidates for graduation, who fail in an examination, are allowed a re-examination before the entire Faculty. No student is recommended for graduation until he has completed all his required work and has passed all his examinations. Further rules concerning examinations are given in the special Announcement of the Department.

COURSES PURSUED IN THE DEPARTMENT OF LITERATURE, SCIENCE, AND THE ARTS.

All the courses of the first two years of the preceding schedule are given as elective courses in the Department of Literature, Science, and the Arts. Students in that Department who intend to study medicine after taking the bachelor's degree, may shorten their total period of residence at the University by from a year to a year and a half, if they elect, as literary students, courses from the first two years of the medical curriculum. The precise amount of time gained will depend upon the number of required medical courses the student completes. Under certain conditions (page 115) literary students are allowed to be registered as students of medicine also. While this opportunity is open to all literary students, it is probable that the course leading to the degree of Bachelor of Science in Biology (page 113) will be the most attractive to those who intend to take also the degree of Doctor of Medicine.

REQUIREMENTS FOR GRADUATION.

To be admitted to the degree of Doctor of Medicine, a student must be twenty-one years of age and possess a good moral character. He must have completed the required courses in laboratory work, and have passed satisfactory examinations on all the required studies included in the full course of instruction. He must have been engaged in the study of medicine for the period of four years. If admitted to advanced standing, he must have attended at least three full courses of medical lectures, *the last two of which must be in this Department*, and have passed the required examinations.

GRADUATE COURSES.

Graduates of this Department of the University, or of other medical schools, are admitted to any one or more of the regular courses of the

curriculum on giving evidence of their ability to profit by the instruction given. Advanced courses, beyond the regular curriculum, are also arranged in several of the subjects taught. Graduate students are required to pay for each course, of six weeks duration, the sum of ten dollars in addition to the ordinary laboratory expenses of the course, which vary with the character of the work.

The nature of the work arranged for graduate students in some of the branches of instruction may be seen from the following descriptive outline:

Hygiene and Bacteriology.—(a) A course of advanced bacteriological study, such as a student who has already completed the required courses in bacteriology may elect. (b) A course arranged especially for health officers, and including the chemical and bacteriological examinations of food, water, soil, and air.

Electrotherapeutics.—A course covering the subjects of diagnosis, electrolysis, the management of continuous current and cautery batteries, and the use of induction coils and the static machine in their therapeutic applications.

Pathology.—(a) A course in microscopical technique; this consists in preparing material for examination, cutting, staining, and mounting sections, and the use of microtome. (b) A course of instruction is given in the changes produced in the different organs of the body by disease, and in the histological structures of the various neoplasms and other abnormal conditions. (c) Special investigations are made into the pathology of particular diseases, either by direct examination of affected parts, or by experimental investigation on the lower animals. This is research work to which only those who have shown some ability in this line of work are admitted.

Physiology and Histology.—(a) A course in physiological demonstrations, designed for those who teach physiology, but have not had opportunity of learning the methods of preparing physiological experiments and vivisections. (b) Those who have sufficient training in laboratory methods, are allowed to use the apparatus and facilities of the laboratory for the investigation of special problems. (c) A course in histological technique, including the methods of preparing, staining, and sectioning tissues.

Chemistry.—Graduates may select work in any of the courses provided in the several departments of the University. The courses in analytical and organic chemistry, are described on pages 78 to 81. Special studies for individual purposes may be undertaken. Opportunity for research is given. The chemical laboratory is supplied with the extensive repositories of science required in research, and with a wide range of

literature of applied chemistry. In any part of the laboratory graduates may select any work they are prepared to pursue.

Anatomy.—Graduates are offered special courses in the anatomy of the nervous system of man, and other vertebrates, extended studies of the organs of special sense, and facilities for the thorough anatomical study of regions of special surgical interest.

Therapeutics.—(a) A study of the influence of certain drugs on the metabolism of tissue. (b) A study of the methods of modern pharmacological research.

These are both laboratory courses and require a knowledge of physiological chemistry and of the methods of the physiological laboratory.

FACILITIES FOR INSTRUCTION.

There are ample collections of plates, photographs, models, specimens, preparations, apparatus, and instruments, for illustrating the different studies embraced in the course. Additions are made from time to time to these collections so that the members of the Faculty are able to adopt every new method of illustration, and to exhibit to the classes each year all important improvements in the way of instruments and apparatus that are employed in the practice of medicine and surgery, and to show their application.

The following paragraphs may serve to indicate the extent of some of these collections and the character of the work done in the several laboratories. For further information in regard to the University museums, laboratories, and libraries, see pages 19 to 29.

MUSEUM OF ANATOMY.

The museums of Professors FORD and SAGER, embracing several thousand specimens, the result of many years' labor in collecting and preparing materials intended to aid directly in teaching, are now the property of the University, and are used in the daily work of the class rooms. These museums contain a valuable collection of bones, illustrating healthy as well as diseased conditions, the various changes that occur from infancy to old age, and the processes of first and second dentition; dissections, general and partial, of the vascular, nervous, and muscular systems, both normal and abnormal; models of various portions of the body in wax, papier-maché, and plaster, illustrating morbid growths, skin diseases, etc.; preparations in the comparative embryology, neurology, and craniology of the vertebrata; in human embryology, in the anatomy and pathology of the diseases of women, etc. The collection of monstrosities, both

single and double, of man and of the lower animals, is one of the largest in the United States.

ANATOMICAL LABORATORY.

The anatomical laboratory is admirably adapted for its purpose; the rooms are large, well lighted, and well ventilated.

The Anatomical Law of Michigan furnishes, without embarrassment, an ample supply of material for the purpose of practical anatomy. All students who desire it and have completed the requirements in descriptive and practical anatomy, can pursue a course in operative surgery upon the cadaver.

In their first year, medical students have opportunity, under competent instruction, to study comparative anatomy and physiology practically by dissecting various animals. While thus becoming familiar with structures and tissues, they also acquire dexterity in the use of instruments preparatory to work upon the human cadaver.

MATERIA MEDICA.

The collection illustrative of Materia Medica has been recently rearranged. Specimens that had grown worthless in the course of time have been replaced by new ones, where the drug is still in use. It is sufficient for all purposes of class demonstration, and is placed at the disposal of the student whenever the request is made. The very complete collection of medicinal plants, crude drugs, and their active constituents in the Museum of Applied Chemistry (page 23) is also open for the students' inspection.

CHEMICAL LABORATORY.

(See also page 26.)

The chemical laboratory provides thorough instruction and suitable appliances for the practical study of all branches of medical chemistry. In each of the two laboratory courses *required for graduation*, namely, qualitative chemistry (devoted to the study of chemical changes and incompatibilities), and physiological chemistry (including the analysis of urine), students are taken in sections of limited number for daily drill in the class room to direct the daily practice in the laboratory. Before beginning laboratory work the student takes a preparatory course, with daily recitations, in chemical notation, and at the close of the work in each course is held to an examination.

ELECTROTHERAPEUTICAL LABORATORY.

The laboratory of electrotherapeutics is supplied with apparatus for illustrating all the various methods for generating electric currents for

therapeutic purposes, and for measuring currents, voltages, and resistances.

The students are furnished materials from which they construct batteries, induction coils, cautery knives, electrodes, and other appliances, and with these experiments in electrophysics, electrophysiology, and electrotherapeutics are conducted.

It is the aim in this laboratory instruction to make the student practically familiar with the faults and essential requirements of all forms of electrical apparatus made use of for therapeutical purposes.

PHYSIOLOGICAL LABORATORY.

The apartments provided for the physiological laboratory offer excellent facilities for practical work, whether of class instruction or of original investigation. A large and well-lighted room is appropriated chiefly to the use of undergraduate students who perform under the direction of instructors most of the fundamental physiological experiments. The subjects commonly embraced in the practical course relate to the physiology of the special senses, muscular contraction, nerve, reflex action, circulation, respiration, and digestion. A smaller room is devoted to advanced work and original investigation. The laboratory has a good supply of apparatus, tools etc., and is open daily for physiological experiment and research.

HISTOLOGICAL LABORATORY.

The histological laboratory is well supplied with microscopes, microscopical accessories, microtomes, imbedding apparatus, and other instruments used in histological work. During his term of instruction in the laboratory each student is furnished with microscopical reagents, a microscope, and a table for his own use, so that the practical work is carried out by each individual for himself.

In the advanced course, which is open only to those who have completed the elementary work, the student is instructed in the various methods of hardening, staining, imbedding, section-cutting, and injection, and is given an opportunity of preparing a very complete collection of specimens in normal histology.

Arrangements have also been made for a course in the practical embryology of the chick. The number admitted to the class is limited, and only those are permitted to take the work who have completed the course in advanced histology.

PATHOLOGICAL LABORATORY.

The pathological laboratory is furnished with microscopes made by R. & J. Beck, Bausch & Lomb Optical Co., and Zeiss, adapted for every requirement. There is also a special microscope with apochromatic object

glass, by Zeiss, for high-power work. There is an ample supply of material for all microscopical study in pathology and every requisite for the cultivation and examination of pathogenic bacteria.

The work in this laboratory comprises an elementary and an advanced course. The elementary course is a required course, taken in the third year. It includes all ordinary practical work in connection with the study of the processes of disease as seen with the microscope. Students who have taken the elementary course and have proved themselves capable of undertaking further work are eligible for the advanced course. This advanced course may consist of an extension of the work previously done, or it may be confined to an investigation into the diseases of the lower animals. On completing the advanced course, the student is competent to undertake an investigation in the highest branch of pathology, the causation of disease, but special investigations of this description cannot be made during the regular four years' course of study. They must be carried on in a post-graduate course, unless the student is willing to devote more than the required four years to his studies before graduation.

Each student is supplied with a microscope and with such apparatus, reagents, and materials as he needs, with the exception of glass slides and covers. The specimens made by him during the course are his property, and he thus obtains a typical set of slides, illustrating all the ordinary forms of disease.

Autopsies.—Post-mortem examinations of all available cases are made before the senior class, and selected students assist at each examination. Sections of the senior class are also instructed in the methods of making post-mortem examinations. No stated times can be set for this instruction, but every student is expected to take part in a post-mortem examination before presenting himself for the final examination in the course in pathology.

HYGIENIC LABORATORY.

The hygienic laboratory has a large room devoted to bacteriological work, containing all of the improved apparatus employed by Koch. The course in bacteriology extends through three months and requires four hours daily in the laboratory for this time. All the known pathogenic and the most important non-pathogenic germs are studied. The microscopes used are those of Zeiss and Leitz. All animals needed for experimentation are supplied by the laboratory. There are also courses in the chemical and bacteriological examination of drinking water, and in the study of food adulterations. Besides these, advanced students who wish to do practical work in the study of ptomaines and leucomaines are accommodated.

The objects had in view in the establishment of this laboratory were as follows: (1) Original research as to the causation of disease. (2)

Sanitary examinations of food and drink. (3) Instruction to students.

Besides the large bacteriological room, there are rooms fitted especially for gas analysis and water analysis, and private rooms for original research. There are also a cold chamber, a disinfecting chamber, and an animal room.

MUSEUM OF NATURAL HISTORY AND LIBRARY.

Students in medicine have access to the botanical, zoölogical, and geological cabinets of the University, estimated to contain 255,000 specimens. The Medical Library contains 5,089 volumes. The General Library, containing 65,942 volumes, is also open to all students. A complete catalogue, arranged both by authors and by subjects, is accessible to readers. The leading medical periodicals of this country and of Europe are taken and kept on file.

THE UNIVERSITY HOSPITAL.

The new University Hospital accommodates a large number of patients, is thoroughly equipped, and is in the immediate charge of a competent house surgeon. The whole is placed under the direction of the Faculty, who attend regularly upon the patients (each upon such cases as come within his special department) and give clinical instruction in the wards to advanced students. In connection with the hospital there is a spacious clinical amphitheatre where clinics are regularly held every day during the collége year, for medical, surgical, gynæcological, ophthalmological, neurological, dermatological, and venereal cases, at which time examinations are made, prescriptions given, and surgical operations performed in the presence of the class.

A lying-in ward is established in which senior students are given an opportunity to attend cases of labor, and become familiar with the duties of the lying-in room, under the immediate direction of the professor of obstetrics and his assistant.

There are separate wards for the reception and treatment of patients affected with diseases of the eye and ear. Students are required to take the history and keep a record of patients, and, under proper supervision, are offered an opportunity of personally examining the patients. It is the aim of the Faculty to make instruction in this branch of medicine systematic and thorough, and this they are enabled to do by an abundance of interesting cases which present themselves in the clinic every year.

For the treatment of diseases of the nervous system the hospital is furnished with apparatus for generating all kinds of electric currents. Attendants especially skilled in the application of electricity and massage are put in charge of such cases.

A large portion of the cases admitted to the hospital are from a distance and are of more than common interest, including many cases of chronic diseases of the lungs, the heart, and the nervous system.

The hospital is kept open for patients during the whole year, but no contagious diseases are admitted. Under the present organization, patients are much better accommodated, and clinical instruction is rendered more systematic and efficient than was formerly possible. The expenses to patients are only for their board, for unusual appliances or special nursing, and for medicines, the services of the Faculty being rendered gratuitously to those made available for clinical instruction.

Patients who desire to enter the hospital are requested to write to the resident physician to ascertain if there is room for their accommodation, and to obtain a circular giving more fully the rules governing admission.

TEXT-BOOKS AND BOOKS OF REFERENCE.

A list of text-books and books of reference recommended is given in the special Announcement of the Department. The student who begins a course of reading without an instructor, is recommended to devote the most of his time for the first year to the elementary branches, anatomy, physiology, and general and medical chemistry.

FEES AND EXPENSES.*

Matriculation Fee.—For Michigan students, *ten dollars*; for all others, *twenty-five dollars*.

Annual Fee.—For Michigan students, *twenty-five dollars*; for all others, *thirty-five dollars*.

Diploma Fee.—For all alike, *ten dollars*.

Material for Dissection.—A charge of *twenty dollars*, which covers all the expenses for practical anatomy during the whole college course, is made for material used in dissection.

Laboratory Expenses.—For all the courses in the chemical laboratory the average expense to medical students has been, for several years past, about *thirty-five dollars*, and for the required course in the hygienic laboratory about *fifteen dollars*. A charge of *five dollars* is made for material used in the histological laboratory. A charge of *ten dollars* is

*The Matriculation Fee and the Annual Fee must be paid in advance, and no student can select his seat until after such payment. No portion of the fees can be refunded, except by order of the Board of Regents, to students who leave the University during the academic year.

made for material and apparatus used in the pathological laboratory, and one of *three dollars* for the physiological laboratory. The expense for the course in electrotherapeutics is about *eight dollars*.

Demonstration Courses.—A charge of *five dollars* is made for each of the five demonstration courses (not including the course in pathology).

Graduate Courses.—A fee of *ten dollars* is charged to graduate students for each course taken, in addition to the ordinary laboratory expenses of the course.

The professors make no charge for lecture tickets, nor are there any additional charges for the recitations conducted by the assistants to the several professors.

The total amount of fees paid to the University during the whole four years' course, for matriculation, incidental expenses, materials used, and diploma, is, for Michigan students, about \$245.00; and for others, about \$300.00, varying a little with the student's actual laboratory expenses.

For additional information in regard to expenses see page 29.

Department of Law.

A special Announcement giving further information in regard to this Department is published annually. For copies of this Announcement or for other information relating to the Department, address Professor J. C. Knowlton, Dean of the Department, Ann Arbor, Michigan.

THE Department of Law was opened in 1859. From the first it has been the constant endeavor of the Faculty to make the instruction imparted and the advantages afforded equal to any attainable elsewhere in the country. No effort will be spared to make it deserve in the future a prosperity like that it has hitherto enjoyed. A spacious building, to which a large addition was made during the past year, is devoted to its accommodation, and contains ample debating and society rooms. In every respect the conveniences of the Department are exceptionally good. The course of instruction for the degree of Bachelor of Laws is a graded course extending over a period of two college years; the course for the degree of Master of Laws requires an additional year.

The college year extends from the first day of October to the Thursday following the last Wednesday in June.

REQUIREMENTS FOR ADMISSION.

If the person applying for admission intends to be a candidate for a degree at the end of his course, he must be not less than eighteen years of age, and must pass such examination in respect to general education as shall satisfy the Faculty that his educational attainments will justify his entering upon the practice of the law when his legal studies are com-

pleted. Examinations will be held in the Lecture Room, in the Law Building, at 2 P. M., on Friday and Saturday, September 29 and 30, 1893. The examination on the first of these days will have reference to general education, and will be on the subjects hereinafter named. The examination on the second day will have reference to legal education, and is confined to candidates for advanced standing. Applicants for advanced standing are required to be present at both of these examinations. Candidates are required to present themselves on these days, as they are expected to be in attendance on the first day of the term, at which time the regular course of instruction will begin. To provide for cases in which it is absolutely impossible for the candidate to be present at this time, supplementary examinations will be held at such times as may be determined upon by the Faculty, but no excuse, except of an urgent character, will be accepted for failure to appear at the first examination.

For many years no prior reading in law was required of candidates for admission to the junior class. The Faculty are of the opinion, however, that for the first year, at least, more positive benefit is received from lectures and more positive advancement in law made, by students who, before coming, have read the Commentaries of Blackstone, than by those who are beginners here. It is not required that the student shall spend any time in a law office before applying for admission. By private study he can easily obtain sufficient legal knowledge to prepare himself for his work here.

Before admission to the Department every student is required to present to the Dean of the Faculty the Treasurer's receipt for payment of the matriculation fee and annual fee. It is essential, therefore, that a candidate for admission should apply first to the Steward of the University at his office in University Hall, register his name as a student in the Department of Law, and pay his fees to the Treasurer. He is then entitled to apply for admission, and, in case of rejection, the money paid preliminary to the examination will be refunded by the Treasurer.

ADMISSION TO JUNIOR CLASS.

Graduates of approved colleges are admitted as candidates for a degree without preliminary examination on producing their diplomas.

Matriculates of colleges and students who have completed an academical or high-school course, and who present a certificate or diploma from the academy or school, are admitted without examination in English branches, and are only required to pass an examination on the portions of Blackstone's Commentaries indicated below.

All other candidates for a degree are required to pass examinations as follows :

1. Arithmetic and Geography.

2. Spelling, Grammar, and the Art of Composition.
3. United States History, and English History. Ransome's Short History of England, or Green's History of the English People, is recommended as affording the student a proper preparation for the examination in English History.
4. The following portions of Blackstone's Commentaries (exclusive of editor's notes):

Book I (exclusive of Chapters 3, 4, 5, 6, 8, and 11);

Book III (exclusive of Chapters 5, 6, 15, 16, and 17);

Book IV.

Book II is used in the instruction given in the Department; and for that reason it is not included in the requirements for admission.

The Faculty recommend the study of Judge Cooley's edition, that being the edition used during the junior year.

The examinations are conducted in writing; and from the papers submitted, the Faculty judge of the applicant's knowledge of spelling, grammar, and the art of composition.

Inasmuch as many present themselves a long time after completing their school education, it may be said that the examination will not be technical. The object is not to ascertain the amount of school-book knowledge which the candidate possesses, but to ascertain the results of his previous training, and his present practical capacity and ability to appreciate the technical study of law.

ADMISSION TO ADVANCED STANDING.

Candidates for advanced standing are examined on whatever subjects they may offer themselves for examination on; the examination not being restricted to the subjects included in the junior year, but being allowed as well on the subjects embraced in the senior year. This examination is not a final one on the subjects offered, but the candidate must satisfy the Faculty that he has made sufficient progress in his study of the law to justify his admission to the senior class. Before graduation, every student is required to pass satisfactory examinations on all subjects included in the course.

ADMISSION OF SPECIAL STUDENTS.

As students come to the University who have been reading law for a considerable period before making application for admission to the Department of Law, but whose reading has not been sufficiently extensive to bring them within the rule for admission to the senior class, it has been thought best to allow such students, in exceptional cases, to become special students, with the privilege of pursuing a select course of study, but without the privilege of being enrolled as candidates for a degree at the end of their term of residence. They are allowed, under the guidance of the Faculty, to select subjects from the courses of both years.

ASSIGNMENT OF SEATS.

Students are allowed to select seats in the lecture room in the order in which they pay their fees to the Treasurer ; and each student is expected to occupy, during the session, the seat selected.

COURSE OF INSTRUCTION.

THE LECTURE COURSE.

It is the design of the Department to give instruction that shall fit students for practice in any part of the country. The course of instruction embraces the several branches of Constitutional, International, Maritime, Commercial, and Criminal Law, Medical Jurisprudence, and the Jurisprudence of the United States, and includes such instruction in Common Law and Equity Pleading, Evidence, and Practice, as will lay a substantial foundation for practice in all departments of law.

Lectures are delivered as follows :

TO THE JUNIOR CLASS.

PLEADING AND PRACTICE. *Professor Griffin.*
 PERSONAL PROPERTY AND TITLE THERETO BY GIFT, SALE,
 MORTGAGE, AND ASSIGNMENT. *Professor Griffin.*
 FIXTURES AND EASEMENTS. *Professor Thompson.*
 EQUITY PLEADING AND PROCEDURE. *Professor Thompson.*
 BAILMENTS AND CARRIERS. *Professor Knowlton.*
 CONTRACTS. *Professor Knowlton.*
 THE LAW OF DOMESTIC RELATIONS. *Professor Mechem.*
 TORTS. *Professor Champlin.*
 AGENCY. *Professor Conely.*
 PARTNERSHIPS. *Professor Conely.*

TO THE SENIOR CLASS.

JURISPRUDENCE OF THE UNITED STATES. *Professor Griffin.*
 EVIDENCE. *Professor Griffin.*
 REAL PROPERTY LAW, INCLUDING LANDLORD AND TENANT. *Professor Thompson.*
 EQUITY JURISPRUDENCE. *Professor Thompson.*
 CRIMINAL LAW. *Professor Knowlton.*
 STATUTORY CRIMES. *Professor Knowlton.*
 WILLS, THEIR EXECUTION AND REVOCATION. *Professor Mechem.*

THE ADMINISTRATION AND DISTRIBUTION OF ESTATES OF DECEASED PERSONS. *Professor Mechem.*

PUBLIC AND PRIVATE CORPORATIONS. *Professor Champlin.*

CONSTITUTIONAL LAW. *Professor Conely.*

Members of the junior class are not allowed to attend the lectures delivered to the senior class. But the members of the senior class, inasmuch as they have been over the subjects of the junior year, are encouraged to attend the lectures delivered to the junior class so far as they may be able so to do.

RECITATIONS AND EXAMINATIONS.

The members of both classes are examined daily throughout the year on the lectures delivered. In addition to this work the classes are divided into sections and required to recite daily upon the lectures, after the manner adopted in the text-book instruction, thereby securing a thorough knowledge of the subjects treated during the year.

At the end of the first year the members of the junior class are subjected to an oral and written examination on the lectures delivered during the year, and their promotion to the senior class is dependent on the manner in which they pass such examination. The examination of the junior class at the end of the year is final on the subjects of that year.

At the end of the second year the members of the senior class are required to pass satisfactory oral and written examinations on the subjects lectured on during the year.

The Faculty do not hesitate to drop a student from the rolls at any time during the year, when satisfied that such student is neglecting his work and not conforming to the requirements of the Department.

TEXT-BOOK INSTRUCTION.

In addition to the instruction by lectures is the instruction by text-book.

The members of the junior class are required to attend daily recitations in Cooley's edition of Blackstone's Commentaries (Book II), and in Anson on Contracts, under Professor KNOWLTON; in Stephen's Rules on Pleading, under Professor GRIFFIN; in Lube's Equity Pleading, under Professor THOMPSON; and in Benjamin Chalmers's Bills and Notes, under Professor MECHEM.

Members of the senior class are required to attend recitations in Heard's Criminal Pleading, under Mr. WELLS, and those who come from Code States are expected to attend regular recitations in Maxwell on Code Pleading, under Mr. JOHNSON; and they will find the instruction thus obtained invaluable in their subsequent practice. Students from States where the reformed procedure has not been introduced may or may not, at their option, attend such recitations.

Satisfactory examinations must be passed by the members of both classes in the text-books used.

Each class is divided into five sections, in order that due attention may be given to the individual student.

THE STUDY OF LEADING CASES.

As much benefit can be derived from a proper study of what are known as Leading Cases, and as it is desirable that students should be familiar with the more important of these cases, the members of the junior class are required to make a study of Leading Common Law Cases.

ELOCUTION AND ORATORY.

It is important for those who study the law with the view of becoming advocates, that they should give attention to the subject of forensic elocution, the better to equip them for the performance of their duties as advocates. It is a mistake to suppose that excellence in speaking is simply a gift of nature, and not the result of patient and persistent labor and study.

The following Courses, given by Professor TRUEBLOOD, are optional; but, when a student has elected a Course, he is required to complete it. Failure to do so will affect his standing at graduation.

TO THE JUNIOR CLASS.

1. Elocution. Exercises in vocal culture, breathing, position, and gesture; elements of quality and force of voice, with their application to choice passages from the orators.

2. Elocution. Exercises in vocal culture, continued; principles of action; elements of pitch and time, and emphasis, and their application to representative selections.

TO THE SENIOR CLASS.

3. Study of Forensic Orators and Oratory. Lectures on methods of public address and sources of power of the orator; study of representative orations.

4. Oral Discussions. Designed to develop readiness of extemporization. Practical application of the principles of formal logic. Leading questions of the day debated in class. Lectures on argumentation and persuasion.

GRADUATE COURSE.

The following course of study is pursued by candidates for the degree of Master of Laws:

PUBLIC INTERNATIONAL LAW. Theses are required on topics assigned.

President Angell.

HISTORY OF TREATIES. *President Angell.*

- HISTORY OF REAL PROPERTY LAW. Seminary work, based on Digby's History of the Law of Real Property. *Professor Thompson.*
- THE LAW OF RAILWAYS. Seminary work in State Control of Railways by Commission. *Professor Knowlton.*
- THE SCIENCE OF JURISPRUDENCE. Text-book: Holland's Science of Jurisprudence. *Professor Mechem.*
- ELECTIONS AND THE APPOINTMENT AND REMOVAL OF PUBLIC OFFICERS. *Professor Mechem.*
- THE RAILROAD PROBLEM. *Professor Adams.*
- COMPARATIVE CONSTITUTIONAL LAW. Lectures on the institutions of Germany, France, and other continental states, with a study of works on the English Constitution. *Professor McLaughlin.*
- ADVANCED COURSE IN CONSTITUTIONAL LAW AND CONSTITUTIONAL HISTORY. *Professor McLaughlin.*
- WRITS OF MANDAMUS, QUO WARRANTO, PROHIBITION, CERTIORARI, AND HABEAS CORPUS. Text-book: High's Extraordinary Legal Remedies. *Mr. Johnson.*
- THE INTER-STATE COMMERCE ACT. *Professor Cooley.*
- ADMIRALTY LAW. *Justice Brown.*
- THE LAW OF INSURANCE. *Dr. Bigelow.*
- MEDICAL JURISPRUDENCE. *Dr. Ewell.*
- CODE PLEADING AND PRACTICE. *Judge Maxwell.*
- INJUNCTIONS AND RECEIVERS. *Dr. High.*
- TOXICOLOGY IN ITS LEGAL RELATIONS. *Dr. Vaughan.*
- MINING LAW. *Mr. Clayberg.*
- PATENT LAW. *Mr. Lothrop.*
- HISTORY OF THE COMMON LAW. *Dr. Hammond.*

Students recite and are examined on the subjects enumerated above, under the direction of Mr. JOHNSON, and, in addition, are required to prepare a thesis on some subject approved by the Faculty, which thesis must be submitted at least two months prior to Commencement.

The members of the junior and senior classes are not allowed to attend the lectures given to the post-graduate students, except that members of the senior class may attend, if they desire, the lectures on mining law and patent law. Post-graduate students are, however, allowed to attend the lectures given to the junior and senior classes.

CONSTITUTIONAL HISTORY AND POLITICAL SCIENCE.

It seems to be conceded now that the law should be studied in a law school, and that the law school should be connected with a university, where students may avail themselves of opportunities for the study of such other branches of learning as are of allied significance.

It is believed that students in the Department of Law may derive great

benefit from the instruction given on kindred subjects in the Department of Literature, Science, and the Arts. Students who first obtain permission from the Law Faculty, and also make special application to the Registrar of the Department of Literature, Science, and the Arts, are allowed to attend lectures delivered in that department, free of charge. But the Law Faculty reserve the right to require such students to give up any or all studies they may be pursuing in the other department, whenever it appears that the pursuit of these studies is attended with an unsatisfactory performance of the duties required in the Department of Law. Among the subjects regarded as particularly suitable for law students the following may be named: Political and Constitutional History of England; Constitutional History and Constitutional Law of the United States; Comparative Constitutional Law; History of the Middle Ages; Elements of International Law; History of Treaties; The Social, Sanitary, and Economic Sciences. (Compare pages 63 to 71.)

MOOT AND CLUB COURTS.

Moot Courts are held from time to time during the year, in which students discuss cases previously assigned them for that purpose by the professors. These courts are presided over by the professor lecturing for the day, who, at the conclusion, reviews the arguments, and gives his decision upon the points involved. The effort here is to make not merely *theoretical* but *practical* lawyers; not to teach principles merely, but how to apply them. To this end, the Moot Courts are made the forum for the discussion of such practical questions as most frequently arise in a professional career at the bar; and the attention of the Faculty is directed not less to the application of the points discussed to actual cases, than to the elucidation of the legal questions. An opportunity is afforded all the senior students to participate in these courts.

Moot Courts are conducted on the theory that certain facts are true, and that the only subject open to discussion is the rule of law to be applied to them. The student having obtained from the Faculty a statement of facts, is required to prepare pleadings, and draw up a brief in which the rules of law are stated under appropriate divisions and sustained by authorities which he proposes to rely upon in his argument.

The fact is recognized that it is desirable to combine theory and practice in the regular work of the Department, and such a course is pursued in so far as it has appeared practicable. It is believed that a student who conducts a case through a Moot Court in accordance with the practice here adopted gains a clearer insight into matters of practice than students ordinarily obtain who study in offices.

Club Courts are organizations among the students, arranged and conducted by themselves, with such assistance from the members of the Fac-

ulty as may be desired. Records are prepared and causes tried, as in actual practice. These courts are found alike interesting and useful to those who participate in them. The Club Courts are open to members of either the senior or junior class, and students are strongly recommended to connect themselves with some one of these organizations. There are also two flourishing literary societies established and conducted by the students of law for the purposes of literary culture.

REQUIREMENTS FOR GRADUATION.

BACHELOR OF LAWS.

The degree of Bachelor of Laws is conferred on such students as pursue the full course of two years in this Department, and pass an approved oral and written examination. It is also conferred upon those who, having attended another law school for a period equal to one year of our course, or practiced law for one term under a license from the highest court of general jurisdiction in any State, where the requirements for admission to the bar are equal to those in Michigan, also pursue one year's course in this Department and pass a like examination.

Special cases depending on previous reading in a law office for a considerable period are decided by the Faculty on application accompanied by a showing of the facts.

Each candidate for a degree is required to prepare and deposit with the Faculty, before the commencement of the second semester of his senior year, a dissertation, not less than forty folios in length, upon some legal topic selected by himself. The dissertation must be satisfactory in matter, form, and style; and the student presenting it will be examined upon it. It must be printed, on a typewriter or otherwise, and bound, and a copy left with the Department. Special rates can be obtained for doing this work, and two or three dollars will cover the expense of printing and binding. In special cases the Faculty will not insist on this requisition, if it should appear to be a burden to a needy student.

MASTER OF LAWS.

The degree of Master of Laws is conferred on any graduate of this Department, who pursues the study of Law in this University for one year after graduation, and who completes to the satisfaction of the Law Faculty such a course of study as may be required; and the privilege thus extended to graduates of this Department is also extended to the graduates of other Law Schools, who can satisfy the Faculty of this Department that the course of study for which they obtained their degree was equivalent to the course of study required for the corresponding degree in this Department.

CERTIFICATES OF ATTENDANCE.

When a person is connected with the school for a period not entitling him to graduate, he may, on application to the Dean of the Faculty, receive an official certificate of attendance, which states the time of his attendance and the degree of his attainments.

MASTER'S DEGREE IN ARTS, PHILOSOPHY, SCIENCE, OR LETTERS.

A graduate of the Department of Literature, Science, and the Arts, who is a candidate for a degree in the Department of Law, may by permission of the Faculties of the two Departments, become at the same time a candidate for a Master's degree in Arts, Philosophy, Science, or Letters. (Compare page 118.) The privilege thus extended to graduates of this University is also extended to graduates of other colleges who satisfy the Faculty of the Department of Literature, Science, and the Arts, that the courses of study for which they obtained their first degree are equivalent to the courses of study required for the corresponding degree at this University.

Useful and desirable opportunities are thus afforded to college graduates who wish to study law and at the same time to supplement their professional studies with a broader knowledge of other branches that will be helpful to them in their professional work.

It is understood, however, that, if the work in this Department is not satisfactory, the Law Faculty will require students of law to discontinue their studies for the Master's degree.

THE LAW LIBRARY.

The Law Library contains 10,744 volumes, and includes the reports of every State in the Union, the reports of the Federal courts, and a very excellent collection of the English, Irish, and Canadian reports. It is kept supplied with new reports as they are issued, and in this way is made as good a working library for students as could be desired. In addition to the reports the library contains an extensive collection of treatises on American and English law, and copies of the statutes of the several States and of the United States.

The library is open for consultation by students from 8 A. M. to 12 M., from 1:30 to 5:30 P. M., and from 7 to 9 P. M., during the academic year, except on Saturday afternoons and evenings. Students are not permitted

to take the books from the library building, but during the hours named are allowed free access to them.

The Honorable C. H. Buhl, of Detroit, recently presented a collection of 5,000 volumes of reports and text-books, known as the Buhl Law Library. This generous gift has made the library a most excellent one in which to pursue an extended study of jurisprudence.

The library was enriched some years ago by the gift of the valuable law library of the Honorable Richard Fletcher, formerly one of the Justices of the Supreme Court of Massachusetts.

The Journal of Jurisprudence (Edinburgh), the Law Quarterly Review (London), the American Law Review, the American Law Register, the Criminal Law Magazine, the Albany Law Journal, the Central Law Journal, and the Federal Reporter, are regularly taken and kept on file.

Students of the Department of Law are also allowed the use of the General Library of the University, which contains 65,942 volumes and 15,930 unbound pamphlets (see page 19).

TEXT-BOOKS AND BOOKS OF REFERENCE.

Text-books and books of reference are very numerous, and students will find the professors ready to lend them aid in making proper selections. While several copies of each of the leading text-books will be found in the library, it is exceedingly desirable that students should supply themselves with such as they may need at their rooms. They will find that it will greatly facilitate their studies to have at hand at all times such of the leading text-books as treat of the more important branches of law. It is also advisable for them, when able to do so, to provide themselves with a copy of the statutes of their State. By so doing no loss will be incurred, as the books will be found essential in subsequent practice. But the only books students are required to provide themselves with are those already named as being used for purposes of text-book instruction. A list of books of reference that may be used to advantage is given in the special Announcement of the Department.

FEEES AND EXPENSES.*

Matriculation Fee.—For Michigan students, *ten dollars*; for all others, *twenty-five dollars*.

*The Matriculation Fee and the Annual Fee must be paid in advance, and no student is allowed to select his seat until after such payment. No portion of the fees can be refunded, except by order of the Board of Regents, to students who leave the University during the academic year.

Annual Fee.—For Michigan students, *twenty-five dollars*; for all others, *thirty-five dollars*.

Diploma Fee.—For all alike, *ten dollars*.

For additional information in regard to expenses see page 29.

School of Pharmacy.

A special Announcement giving further information in regard to this School, and containing a register of residences and occupations of the alumni, revised each year so as to constitute a full professional directory, is published annually. For copies of this Announcement, or for other information relating to the School, address Professor A. B. Stevens, Secretary of the Faculty, Ann Arbor, Michigan.

THE School of Pharmacy gives training for all branches of pharmacy and for various chemical pursuits of the present time. It makes a well-grounded preparation for service as a manufacturing chemist or as an analyst. The graduate is assured a thorough qualification for the prescription table, and for the most responsible positions in pharmacy. He is fitted to act as the chemist of the medical profession. In respect to the discipline of both the intellectual and the executive powers, the work of the School offers decided advantages, in the steady requirement of severe studies, and of exact operations, on the part of each student.

The school year extends from the first day of October to the Thursday following the last Wednesday in June. Students of the first year are released the second Friday before Commencement. For special purposes admission may be granted at the beginning of the second semester, February 19, 1894. For the full regular work admission cannot be granted at any other time than at the opening of the first or the second semester, as students are instructed in classes in progressive order. For investigations, students can be received at any time when there is room in the laboratories.

REQUIREMENTS FOR ADMISSION.

All applicants for admission must be at least eighteen years of age.

It is advisory to obtain at least a year of practical training in a drug store before entering the college course in pharmacy. The required work in the School leaves the student no time for any engagement in a drug store during the college year.

Applicants who bring diplomas of graduation from standard high schools, or certificates of good standing in institutions of collegiate grade, are admitted without examination.

Applicants who bring evidence of having been engaged in the practice of pharmacy for at least two years are admitted on examination in the following branches :

1. **English.**—Each candidate is examined as to his ability to write English, correct in orthography, punctuation, the use of capitals, grammatical construction, and rhetorical fitness.

2. **Mathematics.**—*Arithmetic.*—Fundamental Rules, Fractions (common and decimal), Denominate Numbers, Percentage, Proportion, Involution and Evolution, and the Metric System of Weights and Measures. *Algebra.*—Fundamental Rules, Fractions, Equations of the first degree, containing two or more unknown quantities.

3. **Latin.**—Jones's First Latin Book, or Harkness's Latin Reader, or an equivalent amount in any other text-book. Instead of Latin, German to the extent of a full year's study is accepted. Those who have a speaking and reading acquaintance with German are held to an examination in the grammar.

Persons over nineteen years of age who bring evidence of having been engaged in the practice of pharmacy, in some capacity, for at least two years, are admitted (for a part or the whole of the course) upon passing the examination in English; but they are not eligible for graduation until they pass the other examinations described in the preceding paragraphs.

Other applicants are examined in the following branches :

1. **English.**—The same as given above.

2. **Mathematics.**—*Arithmetic.*—The same as given above. *Algebra.*—The same as given above. *Geometry.*—The Elements of Plane Geometry, as given in Olney's New Elementary Geometry, or an equivalent in other authors.

3. **Latin or German.**—The applicant may offer (1) three years of preparation in Latin; or (2) two years in Latin and one year in German; or (3) one year in Latin and two years in German. Those who offer three years in Latin are examined in the *Grammar*—a thorough preparation in the elements; in *Prose Composition*—Jones's Exercises in Latin

Prose Composition, or an equivalent in some other text-book; and in *Reading*—four books of Caesar's Commentaries, and six select Orations of Cicero, or an equivalent amount in some other text-book. Those who offer two years of Latin are examined as above, except in the Orations of Cicero. Those who offer one year of Latin are examined in an amount equivalent to Jones's First Latin Book. Those who offer one year of German should have had daily recitations on the Grammar during that time, accompanied by weekly exercises in writing, and the reading of seventy-five pages of some German reader. Those who offer two years of German should have devoted one year to the reading of some complete work of literary art.

4. Physics.—Avery's Natural Philosophy, Carhart and Chute's Elements of Physics, or an equivalent.

5. Botany.—Practical exercises in the study of common plants, so conducted as to secure a familiar acquaintance with the essential facts of vegetable morphology, physiology, and relationship. See page 35 for further information as to the extent of this requirement.

Applicants whose preparatory course of study has not conformed precisely to the requirements above enumerated are allowed to offer, in place of a portion of these requirements, an equivalent amount in similar branches of study; and if they show, by examination, or by other evidence, that the work in these branches has been sufficient in amount, such branches are accepted as a substitute for those omitted.

TIMES OF EXAMINATIONS.

An examination for admission will be held on Friday and Saturday, June 16 and 17, 1893, and another on Friday and Saturday, September 29 and 30. The examinations will begin in each case at 9 A. M. on the first of the two days mentioned. Candidates may take their examination at either of these times, as they prefer.

COURSE OF INSTRUCTION.

STUDIES OF THE FIRST YEAR.

1. Pharmacy.—History of pharmacopœias; metrology and chemical problems; operative pharmacy and its physical principles; the galenical preparations; official standards and purity; heat and its uses.

2. General Chemistry and Physics.—Lectures with experimental illustrations, and recitations.

3. Botany and Microscopy.—Systems of plants and plant structure, with drawings from the microscope by the student; the identification of powders, and detection of adulterations.

4. **Pharmacognosy.**—The recognition of chemicals, crude drugs, and preparations, all in the hands of the student.

5. **Quantitative Chemical Analysis.**—Preparatory work on chemical notation, solubilities, formation of compounds, and chemical equations. A series of analyses, and the study of oxidation and reduction with notation by negative and positive bonds.

6. **Pharmacopœial Preparations.**—The minor operations of pharmacy; production of the galenicals, solid and fluid extracts, and scale preparations; chemicals, distillations, and organic synthèses; extemporaneous pharmacy.

STUDIES OF THE SECOND YEAR.

7. **Materia Medica.**—Medicines, their classification, history, physiological effect, and doses. Prescription writing, language, and latinity; prescription reading from actual files of the pharmacy.

8. **Practical Pharmacognosy.**—Recognition of crude drugs, chemicals, and preparations, in the hands of the student.

9. **Pharmacology and Therapeutics.**—The physiological action of medicines, and their relative position and value in the uses of the physician.

10. **Crystallography.**—Systematic crystallography applied to the recognition of chemicals.

11. **Organic Chemistry.**—The systematic chemistry of the carbon compounds, with experimental illustrations.

12. **Quantitative Chemical Analysis.**—Specific gravity; volumetric determinations; gravimetric determinations; gravimetric separations.

13. **Organic Analysis.**—Tests of identity; methods of separation; analysis of "secret medicines;" drug assays; valuation of foods; toxicology and analyses for evidences of poisoning.

14. **Pharmacy.**—Of inorganic and organic materials, in respect to commercial sources, manufactures, uses, tests, and standards of strength and purity.

15. **Analysis of Urine (Elective).**—Normal and abnormal, by chemical, microscopical, and volumetric methods. Physiological and pathological indications.

SCHEDULE OF HOURS.

FIRST YEAR.

FIRST SEMESTER.

8¼ to 9¼ Daily.	Course 5.	Recitations and lectures.
9½ to 10½ Daily.	Course 2.	Lectures.
10½ to 11½ Tuesday, Thursday.	Course 4.	Recitations.

10½ to 11½	Wednesday, Friday.	Course 1.	Lectures.
1 to 5	Daily.	Course 5.	Laboratory.

SECOND SEMESTER.

8¼ to 9¼	Monday, Tuesday, Wednesday, Thurs- day.	} Course 3.	Laboratory.
9½ to 10½	Monday, Wednes- day, Thursday, Fri- day.		
9½ to 10½	Tuesday.	} Course 3.	Lectures.
10½ to 11½	Wednesday.		
10½ to 11½	Monday, Friday.	Course 4.	Recitations.
10½ to 11½	Tuesday, Thursday.	Course 2.	Lectures.
11½ to 12½	Daily.	Course 1.	Lectures.
1½ to 5½	Daily.	Course 6.	Laboratory.

SECOND YEAR.

FIRST SEMESTER.

8¼ to 10½	Wednesday.	Course 10.	Practice.
9½ to 10½	Monday, Tuesday, Thursday.	Course 14.	Lectures.
10½ to 11½	Daily.	Course 11.	Lectures.
11½ to 12½	Tuesday, Thursday.	Course 12.	Lectures.
11½ to 12½	Monday, Wednesday, Friday.	Course 9.	Recitations.
1½ to 5	Daily.	Course 12.	Laboratory.
4 to 5	Monday, Wednesday.	Course 10.	Lectures.

SECOND SEMESTER.

9½ to 10½	Monday, Thursday.	Course 9.	Lectures.
8½ to 10½	Daily.	Thesis.	Library.
10½ to 11½	Tuesday, Thursday.	Course 8.	Recitations.
10½ to 11½	Wednesday, Friday.	Course 13.	Lectures.
11½ to 12½	Daily.	Course 7.	Recitations.
5 to 6	Daily.	Course 14.	Museum.
1½ to 5½	Daily.	Course 13.	} Laboratory.
		Thesis.	

SELECTED STUDIES.

Students are received for special lines of technical training, with liberty to take such branches as shall be found profitable to them. All branches of analytical chemistry are open to such as are prepared to take them.

EXAMINATIONS.

In each of the courses of instruction enumerated (1 to 15) an examination is held at the time the work is completed by the class. The result is reported to the Faculty, and each student enrolled in the class is recorded as Passed, Conditionally Passed, Provisionally Passed, Not Passed, or Absent. The record is not based wholly upon the examination, but upon (1) standing in recitations through the course, (2) diligence and success in the laboratory work, and (3) standing in the examinations. If "Passed," the student receives credit for the completion of the study reported upon. If "Conditionally Passed," he must make up the condition imposed. A record of "Not Passed" requires the student to go over the regular exercises of the study again. A student "Provisionally Passed" is transferred from the immediate charge of the instructor to that of the Faculty, who will withhold credit until better scholarship is attained in other studies. A record of Provisionally Passed may be changed by the Faculty to a record of Passed, Conditionally Passed, or Not Passed, whenever such change shall be justified by the scholarship of the student in his studies in the school. Whenever the Faculty is satisfied that a student does not fulfil the purpose of his studies, he is informed, and his parents or guardians are advised that he should leave the school. If the advice be not regarded, it becomes the duty of the Faculty to take mandatory action.

REQUIREMENTS FOR GRADUATION.

The degree of Pharmaceutical Chemist is conferred upon students who have completed the courses of required study, have obtained credit for examinations in these courses in the manner above stated, and have presented a satisfactory thesis.

The thesis must embody the results of research by the student under the direction of the Faculty. The subject is to be selected as early as the first of March, an outline of the proposed investigation is to be presented with references to the literature in the first week of April, and the completed report, with citations of the authorities in full, is to be ready by the middle of June. For most subjects the experimental investigation and the literary research make equally heavy demands upon the industry of the student.

Experience in the business of pharmacy is not made a requirement for a degree. A year of pharmaceutical experience after college is worth several years of the same before college. But until experience be obtained, the graduate in pharmacy is not fully ready for responsible service in commercial practice.

POST-GRADUATE STUDIES AND A HIGHER DEGREE.

Extended facilities for advanced studies under instruction are given to graduates who take an additional year in the school. These facilities are adapted to preparation for service in manufacturing chemistry and pharmacy, or in any branch of analytical chemistry. The student elects such laboratory courses and other studies as will be most helpful to him in responsibilities for which he desires to be qualified. Additional study in the Department of Literature, Science, and the Arts may be elected, if the Faculty find such elective work advisory. (See page 78 for the courses in analytical and organic chemistry given in that department.) The following are among the available courses open to graduates:

1. Quantitative Analysis.—Advanced quantitative work in any direction. Iron and steel analysis, valuation of fertilizers, mineral waters, brines, etc.

2. Organic Analysis.—Proximate analysis, detection of adulterations, assays of drugs, valuation of foods, sanitary chemistry—laboratory work and reading in the library. Ultimate organic analysis and preparations—an organized course.

3. Purification of Chemicals.—An organized course of laboratory work, furnishing pure chemicals for use.

4. Industrial Chemistry.—Training for manufacturing and for commercial analysis.

5. Experimental Researches.—In manufacturing invention; in analytical methods; in pure science. Bibliography of pharmaceutical chemistry.

A second degree is offered to resident graduates of this School upon the following requirement, viz., the accomplishment of original research, of an extent representing the average work for a full college year, and of sufficient ability and faithfulness. Applications are accepted by the Faculty from those who have already shown that they are adapted to engage successfully in investigations. A full record of the work, with citation of authorities, in form for publication, is required. Upon completion of the requirement, the degree of Master of Pharmacy is conferred.

TEXT-BOOKS AND BOOKS OF REFERENCE.**TEXT-BOOKS.**

First Year.—In General Chemistry, Freer. In Physics, Carhart and Chute. In Qualitative Analysis, Prescott and Johnson. In Pharmacy, the U. S. Pharmacopœia and Remington's Practice. In Botany, Bessey. In Pharmacognosy, Maisch's Organic Materia Medica.

Second Year.—In *Materia Medica*, The Dispensatory. In *Quantitative Analysis*, Cheever's Select Methods. In *Organic Chemistry*, Berntsen. In *Organic Analysis*, Prescott. Lyon's *Pharmaceutical Assaying* is advised.

Students who study in the same room may unite in the use of the dispensatory, and the other large works.

BOOKS OF REFERENCE.

These are provided in the General Library of the University, which embraces the library of the School of Pharmacy. All the important repositories of chemistry and pharmacy, including the principal periodicals in complete sets, and the latest works of reference, are accessible to the student, and are in use for original research. During the second semester, students have direct access to an alcove supplied with about one thousand volumes of pharmaceutical literature, and other works can be obtained from the book room by calling for them.

FEES AND EXPENSES.*

Matriculation Fee.—For Michigan students, *ten dollars*; for all others, *twenty-five dollars*.

Annual Fee.—For Michigan students, *twenty-five dollars*; for all others, *thirty-five dollars*.

Diploma Fee.—For all alike, *ten dollars*.

Laboratory Expenses.—These vary with the prudence and economy of the student.

For additional information in regard to expenses, see page 29.

*The Matriculation Fee and the Annual Fee must be paid in advance. No portion of the fees can be refunded, except by order of the Board of Regents, to students who leave the University during the academic year.

Homœopathic Medical College.

A special Announcement giving further information in regard to this College is published annually. For copies of this Announcement or for other information relating to the College, address Dr. Daniel A. MacLachlan, Secretary of the Faculty, Ann Arbor, Michigan.

THE Homœopathic Medical College was established as a Department of the University in 1875. The friends of Homœopathy everywhere will be gratified to know that since the establishment of the College, wise and liberal provisions have been made by successive legislatures for its maintenance and success. The recent appropriations made for hospital purposes place the College in a most encouraging and satisfactory condition. The continuous progress in the past promises to remain uninterrupted in the future. The College has commodious buildings on the University campus. The new hospital is only a few blocks distant.

The college year extends from the first day of October to the Thursday following the last Wednesday in June.

REQUIREMENTS FOR ADMISSION.

Every candidate for admission to the Homœopathic Medical College must be eighteen years of age, and must present to the Faculty satisfactory evidence of a good moral character.

Women are admitted, as to all other departments of the University, on the same conditions as men.

Matriculates in a regular course in the Department of Literature, Science, and the Arts (page 33), graduates of literary colleges of good

standing, graduates of approved diploma schools;* and of other high schools of equal standing, are admitted without examination on presentation of proper evidence to the Secretary of the Faculty. For all others the requirements for admission are as follows:

1. **English.**—An essay of not less than two pages (foolscap), correct in spelling, punctuation, capital letters, grammar, and paragraphing.

2. **Mathematics.**—*Arithmetic.*—Fundamental Rules, Fractions (common and decimal), Denominate Numbers, Percentage, Proportion, Involution and Evolution, and the Metric System of Weights and Measures.

Algebra.—Fundamental Rules, Fractions, Equations of the first degree, containing two or more unknown quantities.

Geometry.—Plane Geometry.

3. **Physics.**—An amount represented by Avery's Natural Philosophy, or Gage's Introduction to Physical Science.

4. **Botany.**—The elements of Vegetable Anatomy and Physiology as given in Gray's Lessons.

5. **Zoölogy.**—Packard's Zoölogy, briefer course.

6. **Physiology.**—Martin's The Human Body, briefer course.

7. **History.**—Myers's General History, or an equivalent; and Higginson's, or Johnston's, History of the United States.

8. **Latin.**—Jones's First Latin Book, or Harkness's Latin Reader, or an equivalent amount in any other text-book. An applicant who is not prepared to pass the examination in Latin, may take a condition in this subject, which condition he must remove before entering on the work of the second year.

The examinations for admission will be held at 2 P. M., Friday and Saturday, September 29 and 30, 1893.† Candidates are required to present themselves at this time, as they are expected to be in attendance on the first day of the term, when the regular course of instruction begins. To provide for cases in which it is absolutely impossible for the candidate to be present at the time announced, supplementary examinations will be held at such times as may be determined upon by the Faculty; but no excuse, except of an urgent character, will be accepted for failure to appear at the first examination.

Before admission to examination, every student is required to present to the Secretary of the Faculty the Treasurer's receipt for the payment of the matriculation fee and the annual fee. It will, therefore, be necessary for the candidate to apply first to the Steward at his office in University Hall, register his name as a student in the Homœopathic Medical Col-

*The diploma schools comprise all those approved by the Faculty of the Department of Literature, Science, and the Arts. For a list of these, see page 43.

† An examination will also be held at 2 P. M., Wednesday, June 28.

lege, and pay his fees to the Treasurer. In case of rejection, the money paid preliminary to examination will be refunded.

ADMISSION TO ADVANCED STANDING.

Persons who have studied medicine elsewhere for one year may be admitted to advanced standing after having passed a satisfactory examination on all the studies which have already been pursued by the class to which they seek admission.

Students in the Department of Literature, Science, and Arts of this University, who intend to study medicine, can gain an advanced standing by taking in that Department Courses practically identical with those prescribed for graduation in this college. (Compare page 115.)

COURSE OF INSTRUCTION.

Surgery.—A complete course of lectures on minor surgery and bandaging is given to students of the first year.

A complete course of lectures on operative surgery, fractures, and dislocations, and on the principles of surgery, is given to students of the third and fourth years.

Candidates for graduation are required to demonstrate their knowledge of operative surgery by operations on the cadaver, a requisite number being provided by the authorities without expense to the class.

Under the direction of the assistant of the chair of surgery, students are allowed to make the necessary preparations for operations, and to assist, when assistance is required. Advanced students, under the immediate supervision of the surgeon in charge, are also allowed to treat patients that have been operated upon.

Materia Medica.—Throughout the college course three lectures a week are given upon materia medica and therapeutics. It is the purpose in this course to present drugs *fully*, and the therapeutic uses of them. Most particular attention is given to the science of materia medica pura and to the homœopathic use of medicine. The students prove one or more drugs upon themselves under supervision of the professor of materia medica, who afterwards discusses before the class the records of these provings.

As each student attends these lectures (three a week) throughout his college course, he is afforded an opportunity of becoming really proficient in the science of materia medica and in the principles underlying the art of therapeutics. The different classes are quizzed at least once a week, upon the lectures heard during the preceding week. Students of the first year receive instruction in pharmacy from the assistant to the chair of materia medica.

Obstetrics, Gynæcology, and Pædology.—The course of study in these several branches is so arranged that separate lectures are given to the several classes in a graded course. Students of the first year are drilled in the fundamental branches of gynæcology, and are taught the use of instruments, the various methods of making gynæcological examinations, etc. With the third year the student enters upon both didactic and clinical work. In the last year of the course lectures are delivered upon special subjects and the senior students are required to make physical and local examinations in the sub-clinics of this department, thus familiarizing themselves with the various methods of practising touch, palpation, obstetric auscultation, etc., and utilizing to the best possible advantage the many patients availing themselves of this special department of the clinic.

Ophthalmology, Otology, and Laryngology.—Regular lectures on these important specialties, amply illustrated from the abundance of clinical material at the disposal of the Faculty, are given in the fourth year. The eye-and-ear, nose, and throat clinic forms one of the most interesting features of the clinical work, and affords the class every facility for a thorough practical study of all the diseases of these organs, that come under the observation of the physician. Students have cases assigned them for dressing and treatment, from time to time, and thus acquire practical skill and knowledge in diagnosis, and in the use of the various instruments.

Theory and Practice of Medicine.—The course in Theory and Practice comprises a thorough discussion of the various subjects belonging to this chair. In addition to a full consideration of those diseases which make up the greater part of the physician's general practice, it includes special courses devoted to diseases of the skin, diseases of the nervous system, and to instruction in physical diagnosis. Careful attention is also given to the study of the pathology of the various diseases considered. No pains are spared to make the student thoroughly familiar with homœopathic practice, as well as with all the latest advances in medicine.

The lectures are fully illustrated by the medical clinic, which is further utilized for giving special instruction in physical diagnosis and in the practical application of the various diagnostic instruments. In the fourth year students have cases in the hospital assigned to their care, from time to time, and they thus have abundant opportunity for gaining bedside experience in the diagnosis and treatment of disease.

Institutes of Homœopathy.—That each student may come to understand homœopathy intelligently, the professor of materia medica at the beginning of his course devotes several lectures exclusively to the Institutes of Homœopathy; and thereafter throughout the course keeps prominent the facts (as presented by various authorities) upon which an intelligent belief in homœopathy may rest.

Mental Diseases.—A special course of lectures on mental diseases is given by Dr. Oscar R. Long, Superintendent of the Michigan Asylum for Insane Criminals.

In all branches of study required for graduation, but not specially provided for in the Homœopathic Faculty, the students receive instruction from the respective professors in the Department of Medicine and Surgery, and, in those branches, they are subject to the same rules, regulations, and examinations, as the students of that department. For further information in regard to this work see pages 123 to 132.

INSTRUCTION FOR WOMEN.

The course of instruction for women is in all respects equal to that for men. Practical Anatomy is pursued by the two sexes in separate rooms, and some of the lectures and demonstrations, which it is not desirable to present to the two sexes together, are given to them separately; but in most of the lectures, in public clinics, in the laboratories, and in various class exercises, it is found that both sexes may attend with propriety at the same time.

SCHEDULE OF STUDIES.

The following schedule shows the arrangement of studies for the course of four years. The subjects taught by the Homœopathic Faculty are marked with a star (*). Three or more lectures are given each forenoon; the afternoons are devoted to laboratory and clinical work.

FIRST YEAR.

LECTURES AND RECITATIONS IN FIRST SEMESTER.

<i>Subjects.</i>	<i>Hours required each week.</i>
Osteology and Descriptive Anatomy.	5
General Ghemistry.	5
Bacteriology.	4
*Materia Medica.	3

LECTURES AND RECITATIONS IN SECOND SEMESTER.

<i>Subjects.</i>	<i>Hours required each week.</i>
Descriptive Anatomy.	5
Physics.	4
Organic Chemistry.	3
Histology.	3
*Materia Medica.	3
*Minor Surgery.	1

LABORATORY WORK IN THE FIRST YEAR.

<i>Subjects.</i>	<i>Time required.</i>
Anatomy.	Every day for twelve weeks.
Chemistry.	Every day for twelve weeks.
Bacteriology.	Every day for twelve weeks.
*Pharmacy.	Once a week for six weeks.

SECOND YEAR.

LECTURES AND RECITATIONS IN FIRST SEMESTER.

<i>Subjects.</i>	<i>Hours required each week.</i>
Anatomy.	5
Physiology.	5
Hygiene.	3
Embryology.	2
*Materia Medica.	3

LECTURES AND RECITATIONS IN SECOND SEMESTER.

<i>Subjects.</i>	<i>Hours required each week.</i>
Anatomy.	5
Physiology.	5
Physiological Chemistry.	3
Hygiene.	2
*Materia Medica.	3

LABORATORY WORK IN THE SECOND YEAR.

<i>Subjects.</i>	<i>Time required.</i>
Anatomy.	Every day for twelve weeks.
Physiological Chemistry.	Every day for twelve weeks.
Histology.	Every day for six weeks.
Electrotherapeutics.	Every day for six weeks.

THIRD YEAR.

LECTURES AND RECITATIONS IN FIRST AND SECOND SEMESTERS.

<i>Subjects.</i>	<i>Hours required each week.</i>
*Theory and practice.	2
*Surgery.	3
*Obstetrics and Gynæcology.	3
*Materia Medica and Therapeutics.	5
Pathological Histology.	1
*Nervous Diseases.	1

DEMONSTRATION COURSES IN THE THIRD YEAE.

<i>Subjects.</i>	<i>Time required.</i>
Pathology.	Every day for six weeks.
*Clinical Medicine.	Every day for six weeks.
*Nervous Diseases.	Every day for six weeks.
*Operative and Minor Surgery.	Every day for six weeks.
*Obstetrics and Gynæcology.	Every day for six weeks.
*Ophthalmology, Otology, and Laryngology.	Every day for six weeks.

CLINICAL COURSES IN THE THIRD YEAR.

<i>Subjects.</i>	<i>Hours required each week.</i>
*Practice.	2
*Surgery.	2
*Gynæcology.	2
*Ophthalmology,	2
*Nervous Diseases.	1

FOURTH YEAR.

LECTURES AND RECITATIONS IN THE FOURTH YEAR.

<i>Subjects.</i>	<i>Hours required each week.</i>
*Theory and Practice,	3
*Surgery.	3
*Obstetrics and Gynæcology.	3
*Materia Medica.	3
*Diseases of Nervous Spstem.	2
*Dermatology.	2
*Ophthalmology, Otology, and Laryngology.	1
Pathology.	1

CLINICAL COURSES IN THE FOURTH YEAR.

<i>Subjects.</i>	<i>Hours required each week.</i>
*Practice.	2
*Surgery.	2
*Obstetrics and Gynæcology.	2
*Dermatology.	2
*Ophthalmology, Otology, and Laryngology.	2
*Diseases of Nervous System.	1

EXAMINATIONS.

At the end of each semester, written examinations are held on all subjects taught during the semester, and each student's grade is entered upon the records of the Faculty. Every student who does not come up to the required standard is notified of his failure, and opportunity is given him to prepare for a second examination upon the subjects wherein he has failed, in order that he may enter upon the advanced studies of the next semester.

REQUIREMENTS FOR GRADUATION.

To be admitted to the degree of Doctor of Medicine, a student must be twenty-one years of age and possess a good moral character. He must have successfully pursued the study of medicine for the period of four years, the last of which must have been in this College. He must have spent the required time in practical anatomy, chemical analysis, etc., in the various laboratories and hospitals, and must have attended the usual quizzes and drills by the assistants of the several chairs. He must also have passed satisfactory examinations on all the studies included in the curriculum.

All candidates for graduation must present to the Secretary time-certificates from the Secretary of the Faculty of the Department of Medicine and Surgery, showing what lectures they have attended in that department.

FACILITIES FOR INSTRUCTION.

The unsurpassed facilities offered by the University of Michigan for thorough study and for original work in various directions are in themselves worthy the serious consideration of all medical students.

The museums of anatomy and materia medica, comprising thousands of specimens, models, and charts, afford the best means attainable for the close study of anatomy, physiology, and pathology. The facilities for the study of chemistry, afforded by the chemical laboratory, are not excelled in any medical college in this country, and the arrangements of the laboratory work are such that medical students, in classes, and working under the direction of the professors in charge, receive practical instruction in the courses in qualitative chemistry, and in the analysis of urine, a knowledge of which has become absolutely indispensable to the successful physician. The histological laboratory, amply supplied with microscopes, sphgmographs, stereopticon, etc., offers rare facilities for the prosecution of practical work in experimental physiology and in histology. The hygienic and anatomical laboratories are models of beauty and convenience, affording facilities for instruction in hygiene and in practical anatomy, unsurpassed, if equalled, by those of any other institution of learning in the United States. In addition to these, students have free access to the general and special cabinets of the University, containing about 255,000 specimens. (Compare pages 20 to 24.) The scientific and philosophical lectures, collateral to medicine, given in the Department of Literature, Science, and the Arts, are also open to them.

The Homœopathic College possesses, in addition, the valuable collection of anatomical and pathological specimens presented to it by Dr. J. N.

Eckel, of San Francisco, Cal., and Dr. A. I. Sawyer, of Monroe, Mich.; this collection, already comprising much valuable material, is constantly growing in importance through contribution from friends of this institution.

The lecture room and amphitheatre are arranged conveniently, have ample seating capacity, and embody the conveniences and necessities which are essential points to the teacher and students.

THE HOMŒOPATHIC HOSPITAL.

The new homœopathic hospital is in charge of a competent resident medical officer and an experienced matron; it is provided with a corps of trained nurses, large, airy, and well-lighted wards for male and female patients, private rooms for special patients, rooms for antiseptic surgery and for lying-in cases, dispensary, etc., all under the immediate direction of the Faculty, the members of which attend upon the sick in the hospital, and draw from them the material for clinical instruction.

The clinical advantages offered are more than ample to meet the demands of any school. Although not in the midst of a populous city, the College has no difficulty in securing all the clinical material which can be utilized, embracing almost every pathological condition likely to occur in daily practice, and a great variety of rare cases and of surgical operations of unusual importance. The surgical, medical, gynæcological, and ophthalmological clinics are held twice a week, at which times examinations of patients are made by the professors in charge, or by students under the direction of the professors, prescriptions given, and surgical operations performed in the presence of the class. Owing to the abundance of clinical material, the several clinics are held on separate days, of which the profession throughout the State will be notified.

The hospital is kept open for patients during the whole year, but no contagious diseases are admitted. Under the present organization, patients are much better accommodated, and clinical instruction is rendered more systematic and efficient than was formerly possible. The expenses to patients are only for their board, for unusual appliances or special nursing, and for medicines, the services of the Faculty being rendered gratuitously to those made available for clinical instruction.

Patients who desire to enter the hospital are requested to write to the resident physician to ascertain if there is room for their accommodation, and to obtain a circular giving more fully the rules governing admission.

TEXT-BOOKS AND BOOKS OF REFERENCE.

A list of text-books and books of reference recommended is given in the special Announcement of the College. The student who begins a

course of reading without an instructor is recommended to devote the most of his time for the first year to the elementary branches, anatomy physiology, and general and medical chemistry.

FEES AND EXPENSES.*

Matriculation Fee.—For Michigan students, *ten dollars*; for all others, *twenty-five dollars*.

Annual Fee.—For Michigan students, *twenty-five dollars*; for all others, *thirty-five dollars*.

Diploma Fee.—For all alike, *ten dollars*.

Material for Dissection.—A charge of *ten dollars* an extremity is made for material used in dissection.

Laboratory Expenses.—For all the courses in the chemical laboratory the average expense to medical students has been, for several years past about *thirty-five dollars*, and for the required course in the hygienic laboratory about *fifteen dollars*. A charge of *five dollars* is made for material used in the histological laboratory. A charge of *ten dollars* is made for material and apparatus used in the pathological laboratory, and one of *three dollars* for the physiological laboratory. The expense for the course in electrotherapeutics is about *eight dollars*.

The total amount of fees paid to the University during the whole four years' course, for matriculation, incidental expenses, materials used, and diploma, is, for Michigan students, about \$220.00, and, for others, about \$275.00, varying a little with the student's actual laboratory expenses.

For additional information in regard to expenses, see page 29.

Students arriving at Ann Arbor, and desiring further information, should apply at the office of the Faculty, in the Homœopathic College, North University Avenue. The office will be open daily during the last week in September, and members of the Faculty will be in attendance. The office hours of the Dean are from 9 to 11 A. M.; of the Secretary from 3 to 5 P. M.

*The Matriculation Fee and the Annual Fee must be paid in advance, and no student can select his seat until after such payment. No portion of the fees can be refunded, except by order of the Board of Regents, to students who leave the University during the academic year.

College of Dental Surgery.

A special Announcement giving further information in regard to this College is published annually. For copies of this Announcement, or for other information relating to the College, address Dr. J. Taft, Dean of the College, Ann Arbor, Michigan.

THE College of Dental Surgery was established as a Department of the University in 1875. The college year extends from the first day of October to the Thursday following the last Wednesday in June. The lectures close about June 15, in order to allow time for the final examinations before Commencement.

REQUIREMENTS FOR ADMISSION.

Every candidate for admission must be eighteen years of age, and present to the Faculty satisfactory evidence of a good moral character.

Matriculates in any department of the University, and graduates of recognized colleges, academies, or high schools, are admitted without further examination on presentation of a proper diploma or certificate.

All other applicants are examined as to their previous education and their fitness to enter on the technical study of dentistry. The subjects on which examinations are held are as follows:

1. English. (a) A grammatical and rhetorical analysis of short selections in prose and poetry. (b) An essay of not less than two pages (foolscap), correct in spelling, punctuation, capital letters, grammar, and paragraphing.

2. Mathematics.—*Arithmetic*.—Fundamental Rules, Fractions (Common and Decimal), Denominate Numbers, Percentage, Proportion, Involution and Evolution, and the Metric System of Weights and Measures.

Algebra.—Fundamental Rules, Fractions, Equations of the first degree, containing two or more unknown quantities.

Geometry.—Plane Geometry.

3. **Physics.**—An amount represented by Avery's Natural Philosophy, or Gage's Introduction to Physical Science.

4. **Botany or Physical Geography.**—*Botany.*—The elements of Vegetable Anatomy and Physiology as given in Gray's Lessons. *Physical Geography.*—Hinman's Eclectic, or an equivalent.

5. **Zoölogy.**—Packard's Zoölogy, briefer course.

6. **Physiology.**—Martin's The Human Body, briefer course.

7. **History.**—Myers's General History, or an equivalent; and Higginson's, or Johnston's, History of the United States.

8. **Latin.**—Jones's First Latin Book, or Harkness's Latin Reader, or an equivalent amount in any other text-book.

An examination will be held in Ann Arbor on Friday and Saturday, September 29 and 30, 1893, at 2 P. M. Candidates are expected to be present at that time. To provide for cases in which it is impossible for the applicant to be present, other examinations will be held at such times as may be determined by the Faculty. In order to receive credit for a full course, students must enter as early as October 15.

Admission examinations are also conducted, at any time designated by the examiners between June 1 and September 20 of each year, at the places and by the persons named below:

Dr. Wm. Mitchell, No. 39 Upper Brook St., London W., England.

Dr. J. G. Friederichs, No. 155 St. Charles St., New Orleans, La.

Dr. J. G. Templeton, 299 Penn Ave., Pittsburgh, Pa.

Dr. Victor H. Jackson, 240 Lenox Ave., New York, N.Y.

Dr. C. T. Stockwell, 327 Main St., Springfield, Mass.

Dr. Alfred W. Hoyt, 243 Wabash Ave., Chicago, Ill.

Dr. Immer C. St. John, Minneapolis, Minn.

Dr. T. J. Hill, Fargo, N. Dak.

Dr. W. J. Younger, San Francisco, Cal.

Dr. J. Taft, 122 W. 7th St., Cincinnati, O.

Dr. George B. Hayes, Tacoma, Wash.

Before admission to the examination in Ann Arbor every student is required to present to the Dean of the Faculty the Treasurer's receipt for the payment of the matriculation fee and the annual fee. It will therefore be necessary for the candidate to apply first to the Steward at his office in University Hall, register his name as a student in the College of Dental Surgery, and pay his fee to the Treasurer. In case of rejection, the money paid preliminary to examination will be refunded.

ADMISSION TO ADVANCED STANDING.

Persons who have studied dentistry elsewhere for at least one year may be admitted to advanced standing after having passed a satisfactory examination on all the studies which have already been pursued by the class to which they seek admission.

Graduates of the Department of Medicine and Surgery or other medical colleges of equal rank, are allowed credit toward graduation for so much of the required course in dentistry as was included in their medical course.

ASSIGNMENT OF SEATS.

Students are allowed to select seats in the lecture rooms and places in the dental laboratory in the order in which they matriculate; and each student is expected to occupy the seat selected during the session.

COURSE OF INSTRUCTION.

In the arrangement of the course of study it is the aim to make it such as will meet the requirements of the student and the expectations of the profession, and will secure the greatest benefit to the public. To accomplish these objects, and to accommodate and benefit those students who desire a thorough dental education, the course of instruction is made to cover three college years. The course thus affords time for the teaching and study of subjects not generally taught; and especially does it give time for thorough work in the laboratories. Though not fully covering the defects of preliminary education, this course, supplemented by repeated examinations and written exercises, remedies some deficiencies of earlier training and is of itself an efficient means of mental discipline, and of professional and scientific culture.

In the arrangement of the work a graded course of study is combined with repetition of the more important lectures, thus avoiding the confusion incident to the presentation of too many parts of the general subject to the mind of the student at an early period of his studies, and also obviating the objection of dismissing one part of a subject before its relations to other parts can be seen and appreciated.

SCHEDULE OF STUDIES.

FIRST YEAR.

<i>Subjects.</i>	FIRST SEMESTER.	<i>Hours each week.</i>
Osteology and Descriptive Anatomy.		3
General Chemistry.		5
Analytical Chemistry.		10
Dental Laboratory Practice.		10
Prosthetic Dentistry (lectures).		1
Demonstrations in Mechanical Technique.		3

<i>Subjects.</i>	SECOND SEMESTER.	<i>Hours each week.</i>
Descriptive Anatomy.		3
General Chemistry.		2
Practical Anatomy.		12
Dental Laboratory Practice.		10
Prosthetic Dentistry (lectures).		1
Demonstrations in Mechanical Technique.		3

SECOND YEAR.

<i>Subjects.</i>	FIRST SEMESTER.	<i>Hours each week.</i>
Descriptive Anatomy.		2
Histology (laboratory and lectures).		7
Bacteriology.		3
Technical and Prosthetic Dentistry.		12
Operative Dentistry (lectures).		2
Prosthetic Dentistry (lectures).		2
Oral Pathology and Surgery.		3
Dental Materia Medica and Therapeutics.		2
Clinical Oral Surgery.		2

<i>Subjects.</i>	SECOND SEMESTER.	<i>Hours each week.</i>
Physiology.		3
Dental Anatomy.		3
Technical and Prosthetic Dentistry.		12
Operative Dentistry (lectures).		2
Prosthetic Dentistry (lectures).		2
Oral Pathology and Surgery.		3
Dental Materia Medica and Therapeutics.		2
Clinical Oral Surgery.		2

<i>Subjects.</i>	THIRD YEAR.	<i>Hours each week.</i>
Operative Dentistry.		2
Clinical Operative Dentistry.		15
Oral Pathology and Surgery.		3
Dental Materia Medica and Therapeutics.		2
Clinical Oral Surgery.		2

Opportunity is given during the third year for optional studies.

All students of the first and second years are obliged to pass examinations on the required branches of their respective courses, before leaving the College at the end of the term. These examinations are held at the close of each semester, and no student who has failed to pass two of the required branches in his course, is admitted to an advanced class during

the first semester of the following year. No standing is given or certificate issued to any one who has failed to pass any of these examinations. Certificates of time are given for the actual period of attendance only.

Anatomy is studied didactically and practically. A full course on general anatomy is taken with the medical classes in the Department of Medicine and Surgery (page 121). Special instruction is also given in the anatomy and histology of all that pertains to the oral apparatus, embracing also particular attention to *comparative* dental anatomy.

In the histological laboratory the student not only acquires a knowledge of the principal structures and tissues of the animal body, but also becomes familiar with the workings and uses of the microscope.

In chemistry, students are required to attend lectures on general chemistry, and also to take a course in analytical chemistry with special reference to those agents or secretions that concern their future needs. A course in the analysis of saliva is optional.

In dental materia medica a special course of lectures embraces the history, pharmacy, pharmacology, and therapeutics of all drugs and remedies used in the treatment of diseases occurring in dental practice, and includes a discussion of pain obtundents, local and general anæsthetics, and prophylactic remedies.

In dental pathology and surgery a course of lectures embraces a discussion of the various diseases which affect the teeth and mouth, and their etiology and treatment. Special attention is given to diseases which pertain peculiarly to the practice of dentistry. Illustrative cases are shown and operated on in the presence of the class. All instruments, appliances, and methods that are of interest or value in this connection are exhibited and discussed.

A course of lectures on clinical oral surgery embraces a consideration of diseases of the mouth and associated parts that are of special interest to the dentist, but which lie more within the province of the medical surgeon for treatment. Illustrative cases are exhibited and discussed, and operations performed, before the class.

In operative dentistry the instruction is both didactic and practical. In the didactic course a full presentation of approved methods, appliances, and materials used in filling teeth is given, together with the principles which form the basis of practice. This instruction is supplemented by practical instruction in the clinical operating room, which is under the personal supervision of the professor of operative and clinical dentistry and his assistants. Here each student is required to spend fifteen hours a week at the chair, operating for patients, and in this way confirming the principles taught and obtaining such manipulative training as will result in desirable preparation for skillful practice.

In prosthetic dentistry the instruction is both didactic and practical.

In the lectures the principles involved in the construction and application of artificial dentures, crowns and bridges, regulating devices, and continuous gum and cleft palate work are fully discussed, and such methods as have proved valuable and worthy are advocated. In the practical department each student in the second year has opportunity and is required to construct and adapt to the mouth practical dentures for the restoration of lost dental organs.

The instruction in dental mechanism embraces experimental construction of the various artificial dentures used to restore lost dental organs. Ten hours a week in the first year are devoted to this work. It consists of taking impressions, making plaster models from impressions, making dies, swedging plates, grinding and adjusting teeth, soldering and finishing, vulcanizing and finishing plates, pouring and finishing cast metal, celluloid, and continuous gum plates, with such instruction as will familiarize the student with the most approved methods for constructing artificial substitutes. In the second year the class devotes one semester to the experimental construction of various styles of crowns, bridges, and regulating devices.

REQUIREMENTS FOR GRADUATION.

To be admitted to the degree of Doctor of Dental Surgery, the candidate must be twenty-one years of age; must possess a good moral character; must have devoted three years to the study of dentistry, and have passed all the examinations required in his course. Unless admitted to advanced standing, he must have attended three full years in this College. It is recommended that he attend these consecutively.

Every candidate is required to write from time to time upon the various branches of his course, and may at the discretion of the Faculty be required to prepare a thesis upon some assigned topic; he must present for inspection practical operations performed by himself in this College, and give satisfactory evidence of his skill and ability as a practitioner.

At least one year's continuous study and work is required of all candidates for a degree upon a post-graduate course.

Under the provisions of the "Dentists Act" of Great Britain, graduates of this College, who are not British subjects, are allowed by the General Medical Council to register and to practice dentistry in that country, without further examination.

FACILITIES FOR INSTRUCTION.

For general information relating to the University libraries, museums, laboratories, and hospitals, see pages 19 to 29.

Among the facilities of special interest to students of dentistry the following may be mentioned:

DENTAL MUSEUM.

The Dental Museum is supplied with a large number of anatomical, physiological, pathological, and histological preparations, including a series illustrating dentition from infancy to the completion of the process in the adult, and the normal changes through life to old age, and also illustrative of the dental and osseous tissues. Preparations, natural and artificial, greatly facilitate the study of the nervous and vascular systems. The design is to make every practicable appliance in this direction available.

The museum has recently been enriched by the generosity of Professor Ford, who has contributed his entire collection of *crania* and odontological specimens, making it one of the best of its kind in this country.

DENTAL LIBRARY.

A library of dental science, containing almost every known work on this specialty, including an almost complete file of every Dental Journal published, is shelved in the dental building, where it is accessible to all students. A finely appointed reading room is connected with the library.

LABORATORY OF MECHANICAL DENTISTRY.

This laboratory contains charcoal and coke furnaces, soldering-table, rolling-mill, and lathes; appliances for the various manipulations of prosthetic dentistry, such as the construction of artificial dentures in gold, continuous gum, silver, aluminum, and other bases; appliances for the regulation of teeth and for the mechanical treatment of oral deformities; and facilities for the manufacture of instruments. The laboratory has accommodations for two hundred students at a time. Particular attention is given to the manipulation and management of the precious metals with reference to their use for dental purposes.

Each student is furnished a bench containing a drawer and cupboard with lock and key, to contain the instruments that he is required to furnish for the prosecution of his work. If a student has any of these instruments it would be well to bring them; but it is more desirable to defer purchasing until the advice of the instructor in the college has been secured, as it is desirable that a complete and uniform outfit should be in the possession of

each student. This outfit will cost about fifty dollars, and if taken care of will be a permanent investment, as the tools will all be necessary and useful in practice. These tools must be purchased at the beginning of the course, as they are required during the first as well as the succeeding years.

DENTAL OPERATING ROOMS.

The operating rooms are large, well-lighted, heated, and ventilated. The main room contains sixty operating chairs, with an extension bracket and movable tables with drawers for instruments for each chair. Other rooms contain chairs and apparatus for the administration of anæsthetics, for the extraction of teeth, and for other purposes. Each student is required to supply himself with a dental engine and a full set of operating instruments; these must be purchased with the advice of the instructor, and will cost about one hundred dollars. Like the laboratory tools, they will be necessary to begin practice, and if carefully used will last many years; consequently care should be exercised in their purchase. They need not be purchased until the second year.

COURSES IN OTHER DEPARTMENTS.

Those who can command the time may also avail themselves of numerous lectures, or pursue elective studies, in the Department of Literature, Science, and the Arts; or may attend special lectures in the Department of Medicine and Surgery, such as those on gynæcology, and the diseases of children, or on other subjects that are of importance to the practicing dentist.

TEXT-BOOKS AND BOOKS OF REFERENCE.

Anatomy.—Gray; Tomes; Black.

Physiology.—Martin; Foster.

Histology.—Schäfer; Klein.

Pathology.—Green.

Dental Pathology.—Wedl; Ingersol.

Oral Surgery.—Garretson; Tomes.

Operative Dentistry.—Harris; Taft.

Prosthetic Dentistry.—Richardson; Haskell.

Oral Deformities.—Kingsley; Talbot; Guilford.

Chemistry.—Freer; Remsen; Mitchell.

Qualitative Chemistry.—Prescott.

Therapeutics.—Gorgas; Potter; Brunton.

Medical Dictionary.—Thomas; Gould.

Metallurgy.—Essig.

Reference Books.—American System of Dentistry; Watts's Chemical Essays; Farrar's Irregularities of the Teeth.

FEES AND EXPENSES.*

Matriculation Fee.—For Michigan students, *ten dollars*; for all others, *twenty-five dollars*.

Annual Fee.—For Michigan students, *twenty-five dollars*; for all others, *thirty-five dollars*.

Diploma Fee.—For all alike, *ten dollars*.

Laboratory Expenses.—*Chemical Laboratory.*—Students are required to pay for the materials and apparatus consumed by them. The average expense for the required course is about *ten dollars*. *Histological Laboratory.*—A charge of *three dollars* is made for material used in this laboratory. *Anatomical Laboratory.*—A charge of *ten dollars* is made for material used in dissecting. *Laboratory of Mechanical Dentistry.*—A fee of *three dollars* is charged to cover the cost of gas, plaster of Paris, wear and tear of laboratory supplies, etc. The expenses for tools for each student are about *fifty dollars*, and for incidentals, teeth, etc., about *fifteen dollars*. These are furnished at the College under the direction of the Faculty.

The average total expenses of a student of dentistry, including University fees, are from two hundred and fifty to three hundred and fifty dollars for the college year. For additional information in regard to expenses, see page 29.

*The Matriculation Fee and the Annual Fee must be paid in advance, and no seat will be assigned to a student until after such payment. No portion of the fees can be refunded, except by order of the Board of Regents, to students who leave the University during the academic year.

List of Graduates of 1892.*

DEPARTMENT OF LITERATURE, SCIENCE, AND THE ARTS.

BACHELOR OF LETTERS.

Jennie Louise Bement,	Carrie Rosepha Heaton,
Myrn Brockett,	Ernest Oscar Holland,
Glenn LaVerne Chapman,	Richard Dwight Merrill,
George Parkhurst Cheney,	Lee Ezekiel Mighell,
William Henry Dellenback,	Edward Crampton Nichols,
Maude Forhan,	George Griffin Prentis,
Eugenia Helen Galloo,	Zuell Preston,
James Waterman Glover,	George Robert Ray, Jr.,
Frances Katherine Gould,	Alfred William Scobey,
Mary Jeanette Grace,	Genevieve Martha Sheehan,
Enoch Horton Harriman,	Charles Carl Spencer,
Myrtie May Haskins,	Lucien Sterling Taylor,
Alice Emma Hatch,	Charles Henry Towle.

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BACHELOR OF SCIENCE.

(IN BIOLOGY.)

Ella Buck,	William Alfred Kickland,
Ardie Marian Clark,	George David Sones,
Edwin Hugh Edwards,	Robert Henry Wolcott, B.L.

6

BACHELOR OF SCIENCE.

(IN CHEMISTRY.)

Frederick Levy Dunlap,	Henry Edward Sauer,
Ralph Stewart MacPherran,	Louis Ernst Schmidt,
George Campbell Rew,	Paul Henry Seymour.

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*The List of Graduates contains the names of all persons on whom degrees were conferred during the year 1892. A dagger (†) indicates that the degree was conferred at some other time than Commencement.

BACHELOR OF SCIENCE.

(IN ELECTRICAL ENGINEERING.)

Thomas Edson Barnum,	Eleazar Darrow,	
Edwin Henry Cheney,	William Beekman Larrabee,	
	Adnah Clifton Newell.	5

BACHELOR OF SCIENCE.

(IN MINING ENGINEERING.)

Charles Arthur Howell,	Hugh Flournoy Van Deventer.	2
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BACHELOR OF SCIENCE.

(IN MECHANICAL ENGINEERING.)

John Robins Allen,	Arthur Frantzen,	
William Bassett,	William Minto Johnstone,	
	John Pease Keyes, Ph.B.	5

BACHELOR OF SCIENCE.

(IN CIVIL ENGINEERING.)

Elmer Louis Allor,	Arthur Douglass Mott,	
Irving Dallas Carpenter,	Walter Webster Seymour,	
†James Noble Hatch,	Albert Henry Smith,	
Alfred Courtney Lewerenz, A.B.,	Edwin Merrill Smith,	
	George Monroe Wisner.	9

BACHELOR OF SCIENCE.

(IN GENERAL SCIENCE.)

Mattie Ormsby Campbell,	Horace Walter Hawkins,	
Henry Ernest Candler,	David Williams McMorran,	
Gertrude Clark,	Frank Wesley Nagler,	
†Edwin Raymond Cole,	Roscoe Linscott Roberts,	
Eugene Gerald Fassett,	Therese Study,	
	Eli Ransom Sutton, LL.B.	11

BACHELOR OF PHILOSOPHY.

Helen Agnes Atkins,	Frank Haigh Dixon,	
Helen Estelle Bacon,	Martha Florence Eddy,	
Charles James Barr,	Virginia Davis Farmer, A.B. (<i>Mar-</i>	
Katherine Cramer,	<i>tha Washington College</i>),	
Sylvanus Wright Curtiss, Jr.,	Ida Bertha Paulina Fleischer,	
Edwin DeBarr, B.S. (<i>Michigan</i>	Herbert Fox,	
<i>Agricultural College</i>),	Jennie Grace Goble,	

†Robert Holland,	Homer Erwin Safford,
Anderson Hoyt Hopkins,	Mary Anna Sawtelle,
Marietta Hubbard,	Frederic Lang Sherwin,
Kate Viola Ilgenfritz,	Walter Fulton Slocum,
Mary Ernestine Krolík,	Miranda Belle Sperry,
William John LeHunte Lyster,	Aline Sallie Szold,
Fred James McElwee,	Perry Fox Trowbridge,
William Robbins Murray,	Arthur J. Tuttle,
Hugo Pam,	Paul John Ullrich,
William Charles Quarles,	Carl Cleghorn Warden,
Maria Emma Ridley,	Pauline Elisabeth Wies,
	Viola May Williams.

BACHELOR OF ARTS.

Lee Earl Amidon,	Jacob Worley Morrison,
Fanny Barnett,	George Fred Mulliken,
Charles Coleman Benedict,	Edwin Spencer Peck,
William Warner Bishop,	Jessica Vaughn Penny,
Mamah Bouton Borthwick,	Carl Dio Perry,
Charles Ambrose Bowen,	John Arthur Peters,
Harry Conant Bulkley,	Frederick Sherman Porter,
Gertrude Mary Bundy,	Louise Fitz Randolph,
Fitzhugh Burns,	Alfred Day Rathbone, Jr.,
Mary Elizabeth Butler,	Pete Whitcome Ross,
Lewis Clinton Carson,	Kate Sagendorph,
James Edward Church, Jr.,	Edmond Lindsay Sanderson,
Lawrence Thomas Cole,	Carl Schlenker,
Heber Doust Curtis,	Lewis Severance,
Walter Adams Cutler,	Edward Sell Smith,
Robert Woodin Doughty,	Frank Carpenter Smith,
Ralph Stillman Garwood,	Harry Tyler Smith,
Frederic Dexter Green,	Sophonra Leland Stevens,
Howard Davis Haskins,	Ella Seass Stewart, A.B. (<i>Eureka</i>
Julia Herrick,	<i>College</i>),
Charles Wardell Heywood,	George Henry Stone,
James Hamilton Kaye,	Frederic Bernard Sturm,
Maude McGregor,	Ada Thomas,
William John McKnight, A. B.	William Collett Tichenor,
(<i>Geneva College</i>),	Pitt Townsend,
Newton D. Mereness,	Mary Turner,
William Henry Merner,	Charlotte Whipple Underwood,
Wilhelm Miller,	William Edwin Walter,
Frank Marion Morrison,	Minnie Amelia Walton,

Benjamin Riddle Whipple,	Frederic Elias Wood,	
Frank Bates Whipple,	Grace Darlene Worrall,	
Herbert Edwin Wilford,	Ada Zarbell.	62

MASTER OF SCIENCE.

Lemuel Churchill, B.S. (<i>Michigan</i>	Moses Gomberg, B.S.,	
<i>Agricultural College</i>),	Charles Hill, B.S.,	
Lyman Frederic Kebler, B.S.		4

MASTER OF PHILOSOPHY.

Mary Clark Bancker, Ph.B.,	Alice May Schoff, B.L. (<i>University of Cincinnati</i>).	2
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MASTER OF ARTS.

Arletta Maria Abbott, A.B. (<i>Vassar College</i>),	John Raymond McCrary, A.B. (<i>Trinity College</i>),	
James Melville Coleman, A.B.,	Esther Boise Van Deman, A.B.,	
Chauncey Alvan Wheeler, A.B.		5

DOCTOR OF PHILOSOPHY.

Willard Kimball Clement, A.M. (<i>Colby University</i>),	Caroline Miles, A.M.,	
Alexander Frederick Lange, A.M.	Samuel Wilber Norton, A.M.,	
Charles Thomas McClintock, A.M. (<i>Kentucky Wesleyan Univ.</i>)	Eliza Read Sunderland, Ph.B.,	
	Max Winkler, A.B. (<i>Harvard University</i>).	7—185

DEPARTMENT OF MEDICINE AND SURGERY.

DOCTOR OF MEDICINE.

Ezra T. Abbott,	Thomas Blair,
Joseph L. Abt,	James Henry Bogan,
Arvid Andersson,	William Knapp Branch,
Clayton W. Armitage,	George Henry Brash,
Victor Bodine Ayers,	John Aaron Broberg,
Nettie Estella Bainbridge,	†Thomas Earl Burgess,
Emil Fred Baur, Jr.,	George Washington Burrier,
Thomas Edward Beaupre,	Wilson Canfield,
Bertram Henry Beckwith,	Henrietta A. Carr,
William Herman Bell,	Angus Raymond Carton,
Emily Augusta Benn, A.B.,	John Baptist Casello,

Shadrach Chaffin,	Mary Anna Kimball,
Starr King Church, Ph.C.,	Julius James Klein,
Lemuel Churchill, B.S. (<i>Michigan</i>	Theophil Klingmann, Ph.C.,
<i>Agricultural College</i>),	Theresa Knauf,
Orton Horace Clark,	Peter John Livingstone,
Charles Dewitt Colby,	Edward Carter Lyman,
Joseph Franklin Condon,	Frank Lyons,
Emma Diantha Cook,	William Arthur MacGugan,
Norman Kershaw Cox, D.D.S.,	Peter Duncan MacNaughton,
Daniel Devine Cunningham, LL.B.,	Webster Clark Martin,
George Robert Curran, B.S.	Reuben Maurits,
(<i>Carleton College</i>),	James Edward Maxwell,
George Smith Davenport,	David McClurg,
John Halvor Dent,	George Washington Moran,
Fred Norton Dewey, A.M. (<i>Hills-</i>	†John Hermon Mowers,
<i>dale College</i>),	Herman George Niermann, Ph.C.,
†John William Dobson,	Peter Juul Noer, B.S. (<i>University</i>
Stewart McLellan Doherty,	<i>of Wisconsin</i>),
Charles Edgar Dorrance,	Walter Noyes,
Homer Corbett Edwards,	James Donoldson Parker, A.B.
Charles Howard Emery,	(<i>Upper Iowa University</i>),
Edwin Robert Espie,	Wallace Asahel Parker, A.B.
Edward Norton Ewer,	(<i>Harvard University</i>),
Royal Twombly Farrand,	Albert Summerfield Payne,
Anna Maria Flynn,	Clyde Phillips Platts,
Augustus William Foy,	Henry John Poppen,
Lucy Woodward Gardner,	Albert Eugène Powell,
Howard Bishop Garner,	Frank Randolph,
Hugh William Graham,	Augustus Walter Reed,
George Willard Green,	Samuel Beatty Robb,
Ernest William Haass,	Don Alphonso Root,
Clarence Wilkie Harris,	William Anderson Royer,
Charles Meigs Harrison,	Frank Ernest Ruggles,
John Henry Hauptmann,	John Schee,
George Stanton Hollister,	Edwin Elmer Sheffield, Ph.B.
William Amos Holt,	(<i>Denison University</i>),
James Eldrid Hosmer,	Henry Stults Sheffield,
Lulu May Hudson, B.L. (<i>Ohio</i>	Rachel Anna Groff Smith,
<i>Wesleyan University</i>),	Richard Root Smith,
Frank Blair Humphreys,	Jeanne Cady Solis,
James Walter Irwin,	LeRoy Southmayd,
Henry Milnor Joy,	Julia Ione Stannard,
Leo Ray Keeney,	Herbert Otto Statler,

George William Stewart,	John Davis Watterson,
†William Issachar St. John, Ph.C.,	Dirk John Werkman, A.B. (<i>Hope</i>
George Frank Suker,	<i>College</i>),
John Nelson Swartz,	William Walter Wertenberger,
Herbert Thurtell,	Jacob Frederick Wesh,
Henry Charles Valentine,	Joseph Burgess Whinery, Ph.C.,
†William P. Walter,	Annie Wells Williams,
Edward Crawford Warren,	Hubert Wallace Wilson,
John Graham Wilson.	

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DEPARTMENT OF LAW.

BACHELOR OF LAWS.

James Henry Adams, A.B. (<i>Coe</i>	Elmer DeWitt Brothers,
<i>College</i>),	Lee Nathan Brown,
John Jarvis Aldrich,	Jeremiah Watson Browning,
Robert Anderson,	Theodore Bruere, Jr.,
Louis Armstrong,	Alfred Budge,
Flor Ashbaugh,	George Horatio Burchard, A.B.
William Asher Atwell,	(<i>Univ. of South Dakota</i>),
Joseph Thomas Atwood,	James Francis Burke,
Edward William Austin, B.L.	Jean La Rue Burnett,
(<i>University of Wisconsin</i>),	David Edward Burns,
George Edward Ayres,	Edward Mayo Burst,
Edwin Green Babcock,	Thomas W. Butler,
Osmond Tower Barnes,	Henry Magnus Butzel, Ph.B.,
Herbert Ellwood Baskerville,	†Franklin W. Callam,
William Arthur Beasly,	Andrew Lamar Campbell,
John Jerome Bennett, A.B. (<i>St.</i>	William Jay Carbaugh,
<i>Mary's College</i>),	William Stanton Card,
Clarence Vanderburgh Benson, B.S.	Mark Chamberlin,
(<i>Colorado Agricultural Coll.</i>),	Fred Llewellyn Chappell, B.S.
George Viley Berry,	(<i>Michigan Agricultural Coll.</i>),
Patrick Austin Berry,	Fenimore Chatterton,
William Arthur Bither, B.S.	Herbert Ward Childs,
(<i>Northern Indiana Univ.</i>),	Edwin Alonzo Church
John A. Bolard,	Bert Ralph Clark,
Fenton Whitlock Booth,	Elmer Hinkley Clement,
William Patterson Borland,	Benjamin Franklin Clough,
Camden Bretz,	Aylmer Cole,
John Daniel Ross Bronson,	Edwin Grant Coleman,

John Archibald Coleman,	Franklin Henry Gale,
Frank Combes,	Horatio Vollandigham Gard,
Almon Ward Copley,	Will Henry Giltner, A.B. (<i>Emin-</i>
William Joseph Coulson, Ph.B.	<i>ence College</i>),
(<i>College of Emporia</i>),	James Thomas Gordon,
David Alpheus Crahl,	William Charles Gottman,
George Oren Crane,	Frank L. Grant,
John Quincy Adams Crosby,	Alexander William Gravelle,
George Herbert Cross,	Lewis Henry Greenwood, B.S.
William Perry Crotser,	(<i>Washburn College</i>),
George M. Davis,	Schuyler Adam Haas,
William Davis,	Charles Maltravis Haft,
John William Dawson, B.S. (<i>Chris-</i>	Jesse Eddy Hall,
<i>tian College</i>),	Richard Addison Hall,
Clinton Leroy Dayton,	Thomas Hallett,
Frank Thomas Dempsey,	Fred David Hammond,
Michael Angelo Dempsey, A.B.	Herbert Lincoln Harley,
(<i>St. Vincent's College</i>),	John Albion Harmon,
Dennis Sullivan Donahue,	Edward Patriek Harney,
James Eugene Duffy, B.L.,	James Harrington,
Charles Pinckney Dunbaugh,	Edward E. Harriott,
Benjamin Charles Durall,	Charles Kellogg Hart,
John William Dwyer,	George Maurice Harton, Ph.B.
George Agler Eberly,	(<i>Adrian College</i>),
Monroe Justus Echols,	Walter Miles Harvey,
Osmond Ellingson,	Frank Bellows Hawk,
Victor Moreau Elting, A.B.	Edward Ralph Heard,
(<i>Columbia College</i>),	John Henry Herley,
John George Erdlitz,	George Hoadly,
Colston Williams Estey,	Frederick William Hoebel,
Walter Bennett Evans,	Franklin James Hole,
Alvin Enoch Ewing,	William Tell Hollenbeck,
Anthony Thomas Faber,	John Stuart Williams Holloway,
Elijah Farr,	William Lawson Holloway,
Dwight Henry Fitch,	Charles Orlando Holly,
Elmer Sherman Follmer,	Francis Triplett Hord,
Frank Lincoln Fowler,	William Thomas Horden,
Thomas Francis Fox, B.S. (<i>Santa</i>	Eber Perley Hotchkiss,
<i>Clara College</i>),	Fred Allison Howe,
Nelson Elwood Freer,	George Erasmus Howes, Jr.,
John George Friedmeyer,	John Warren Hunter,
Takenosuke Furuya,	John Courtney Hurspool,
Thomas Joseph Gaffey,	Achirah Ito,

Robert Ross Jamison,
 George Alba Jeffers,
 Willis Valentine Jefferson,
 Julie Regula Jenney,
 Robert Francis Jess,
 George Clarke Johnson,
 Ernest Fenwick Johnstone,
 Isaac Lincoln Jones,
 George Libni Kelley,
 Maris T. Kendig,
 John Francis Kennedy,
 Philip Markham Kerridge,
 Guy Byron Killen,
 Joseph Kirwin,
 John Knauf,
 Will Alanson Koon,
 Joseph George Kral,
 †Linford Elsworth Krotz,
 Elmer Leamond Lane,
 Eugene Francis Law, B.S. (*Michigan Agricultural College*),
 Thomas Lawry,
 Clarence Asa Lawson,
 Charles Miller Lemmon, A.B.
 (*Mt. Union College*),
 Wilson David Lett, B.S. (*Wau-
 seon College*),
 Milton Elisha Lewis, A.B. (*Uni-
 versity of Omaha*),
 Frank Albert Lindbergh,
 Albert Isadore Loeb,
 William Devinney Lukehart,
 William Pitt Luther,
 Thomas Richard Lyons,
 Russell Trall MacFall,
 Alex Charles Mackenzie,
 John Maley,
 John Michael Manley,
 Walter Irving Manny,
 Rody Patterson Marshall,
 Albert Martin, A.B. (*Kentucky
 Wesleyan College*),
 Frank Martin,

William Jesse May,
 Samuel McKean McCalmont,
 Alexander Donald McCarty,
 †Thomas Shepard McClure,
 John Hemphill McCorkle,
 John M. McGill,
 Newton Jaspar McGuire,
 Angus Alexander McLaughlin, B.S.
 (*Iowa Agricultural College*),
 Harry L. McNeil,
 Walter Dale Meals,
 Sherman Tecumseh Mears, B.S.
 (*Cornell College*),
 James Franklin Meeker,
 William Edgar Menohar,
 †Albion Frederic Merchant,
 William Wallace Merritt, Jr.,
 Le Grand Theodore Meyer,
 Charles Richard Moore,
 Frank Cleveland Moore,
 George Emanuel Morgan,
 Thomas Arthur Morrin,
 Aaron William Morris,
 Cramer Bismark Morris,
 Oscar Wood Moyle, Ph.B.,
 Clayton Loren Murphy, B.S.
 (*Fayette University*),
 Hugh Ayers Myers,
 Mack Nichols,
 Ernest Dudley Nickerson,
 Simon Alexander Niebuhr,
 Thomas Nolan,
 George Morris O'Connor,
 Charles Eugene Olver,
 Lester Samuel Overholt,
 Alvin Julian Padgett,
 George Enoch Pardee,
 Melvin Benjamin Parmely, Jr.,
 George Robert Patterson,
 James Laferty Patterson,
 Newton Henry Peer,
 John Wesley Pennington, B.S.
 (*Ada University*),

Pierce Jeremiah Phelan,	Isaac John Stewart,
Howard Phillips,	Samuel White Stewart,
Frank Milton Pierce,	Ralph Stone, A.B. (<i>Swarthmore</i>
William Monroe Pindell,	<i>College</i>),
William Thomas Polkinghorn,	D Storms,
Hervey Meek Porter,	Daniel Edward Storms,
Lyman Theodore Powell,	Will Parker Story,
Walter Harriman Prescott,	John Jones Street,
Albert Reinhold Pudewa,	Edward Albert Stricker, B.S.
Morgan Bates Pulcifer,	(<i>Michigan Agricultural Coll.</i>),
Miles James Purcell,	Charles Elmer Sturtz,
Abraham Jay Randall,	Dennis Parnell Sullivan,
George Jost Reiner,	Patrick William Sullivan,
James Washington Reynolds,	George Andrew Sutherland,
William Henry Reynolds,	Genko Tanaka,
Jesse Elmer Roberts,	Charles Howard Thomas,
Horton Clifford Rorick,	Robert Foster Thompson,
Gentaro Sabata,	Willard Dawson Thompson,
Elias Daniel Salsbury,	Robert Gurdon Thomson, A.M.
Albert Edward Sanderson,	(<i>University of Missouri</i>),
Hazen Irwin Sawyer,	Harry Montford Ticknor,
Joseph Sears, Jr.,	Samuel Treby,
Arthur Henry Seymour,	Victor Allen Trook,
Walter La Forest Shank,	Frank Pierce Tscharner,
Peter Sharpe, B.S. (<i>North Dakota</i>	William Arthur Turner,
<i>University</i>),	John Arthur Van Arsdale, A.B.,
Ralph Martin Shaw, A.B. (<i>Yale</i>	Edwin Hudson Waite,
<i>University</i>),	John Henry Walker,
Fred Arthur Sheldon,	Neil Richard Walsh,
Elmer Ellsworth Shields,	Clarence Griffin Washburn,
Herbert Bradish Shoemaker, A.B.	John C. Waters,
Albert Philips Simpson,	Joseph Fred Webb,
Howard Jay Slagle,	Daniel Weber,
Horatio Buck Smith,	Arthur Webster,
Hyrum Alma Smith,	Frank Maury Wells,
Leon Alberti Smith,	Francis Joseph Welsh,
Perry Smith, Jr.,	Frank Lewis Welsheimer,
William Andrew Smith,	Alvin Fernando Wentworth,
Frank Albert Spies,	Robert Cochran Wertz,
Victor DeForest Sprague,	James Harvey Whitely,
Howard Dexter Stannard,	George Pentzer Whitsett,
Grant Steele,	Kirk Edward Wicks,
William Sherman Steele, A.B. *	Edwin John Wilber,
(<i>Hamilton College</i>),	George Orville Williams,

George Bruce Wilson,
Matthew Raleigh Wilson,
William Luther Winn,
Benjamin Bourdett Wood,

Henry Lester Wood,
Herbert Leonard Woodworth,
Daniel Wright Yancey,
William Elmore Young, A.B. (*Ohio
Normal University*). 294

MASTER OF LAWS.

Patrick James Cosgrave, LL.B.,
Alfred Job Davis, LL.B.,
Hallie C. Ellis, LL.B.,
Pierre Peyre Ferry, LL.B.,
Abram Lynn Free, LL.B.,
Arthur Kingsley Holmes, LL.B.,
Harry Eugene Hooker, LL.B.,
Thomas W. Hughes, LL.B.,
Harry Dimick Jewell, LL.B.,
Arthur Jay Kendall, LL.B.,
George Abiathar Kendall, LL.B.,

Yojiro Kuwabara, LL.B. (*English
Royal Institution*),
Jehu Baker Middlecoff, LL.B.,
George Washington Pierson, LL.B.,
Michael Roach, LL.B.,
William Henry Sears, LL.B.
(*University of Kansas*),
Eli Ransom Sutton, LL.B.,
Will Frank Wanless, LL.B.,
Arthur Percival Will, LL.B.,
Gingiro Yoshimura, LL.B. (*English
Royal Institution*). 20-314

SCHOOL OF PHARMACY.

PHARMACEUTICAL CHEMIST.

Harris Edson Allen, B.S. (*Fayette
College*),
Daniel Webster Atwood,
Harry William Birkmier,
Walter Briggs Cady,
Rudolph Benton Carssow,
Burt Eugene Cody,
Amasa Day Cook,
Fred Thomas Drake,
Richard Fischer,
Elliott Hafley Haag,
Mary Katharina Heard,
Phil Garry Hower,
George Richard Jackson, A. B.
(*Oberlin College*),

William Andrew Kelly,
Julius Martin Klein,
Alfred Ernest Landers,
Joseph Lohrstorfer,
Emerson Romeo Miller,
James Harry Parsons,
George Henry Pattison,
Oscar Charles Pusch,
Thomas Edwin Robinson,
William Emanuel Sandford,
Leonard Adam Seltzer,
John Terence Sheedy,
Oscar H. Soetje,
John Bird Sutton,
George Jones Warner,

Joseph Jerome Wells.

29

MASTER OF PHARMACY.

Roy Demas Young, Ph. C.

1-30

HOMŒOPATHIC MEDICAL COLLEGE.

DOCTOR OF MEDICINE.

Charles William Behm,	Joseph Clifford Harder,
John Campbell Buell,	Jennie Hughes,
Nelson Hoyt Chamberlain,	Francis V. Martin,
William Whittelsey Cheney, A.B.	Elmer Douglass Osmun,
(<i>University of Minnesota</i>),	Fred Johnson Peck,
Annie Bissell Dillon,	Charles Dwight Pullen,
Frank Wilmot French,	Anna Barrington Taylor,
Ernest Frank Gamble,	Cyrus Milton Thurston,
Lewis Bradstreet Gardner,	Essington Tracy Trummer,
	Ida Clerke Woolsey.

18

COLLEGE OF DENTAL SURGERY.

DOCTOR OF DENTAL SURGERY.

Burt Abell,	Thomas Ebenezer Howson,
Samuel Howard Arthur,	Osgood Frank Ingalls,
Harry Howard Avery,	Vida Annette Latham,
Harry Park Ball,	Ben Hubbard Lee,
Walter Joel Bell,	Frank P. Martin,
Charles Lee Blunt,	James Andrew Milliken, D.D.S.
Herbert Warren Bovee,	(<i>Univ. of Pennsylvania</i>),
Charles Edward Burchfield,	Henry Milling,
Charles Sylvester Chadwick,	John Albert Moore,
Timothy Spencer Childs,	William James Mummery,
Timothy Coleman, D.D.S. (<i>Royal</i>	William Edward Prather, D.D.S.
<i>College of Dental Surgeons</i>),	(<i>University of Maryland</i>),
Eli Mahlon Conard,	Frank S. Prettyman,
Oscar Willmott Daly, D.D.S. (<i>Royal</i>	Ellen Dennison Searle,
<i>College of Dental Surgeons</i>),	Edward Douglass Slawson,
Archibald Warren Diack,	Joseph Allen Snyder,
George Dilworth,	Edward Bartlett Spalding,
Elmer C. Goldthorp,	Carrie Marsden Stewart,
Allison William Haidle,	George Ernest Tribby,
Charles William Hall,	Anthony Van Kammen,
Henry James Harvey,	Austin Smith Watrous,

May Weston.

39

HONORARY DEGREES.

DOCTOR OF PHILOSOPHY.

JOHN WILLIAMS LANGLEY, B.S., M.D.,

Professor of Electrical Engineering in the Case School of Applied Science.

ROBERT SIMPSON WOODWARD, C.E.,

Astronomer of the United States Geological Survey.

2

Total number of Degrees Conferred, 704.

FACULTIES AND STUDENTS.*

Department of Literature, Science, and the Arts.

FACULTY.

JAMES B. ANGELL, LL.D., *President*,
ALBERT B. PRESCOTT, PH.D., M.D.,
REV. MARTIN L. D'OOGHE, LL.D., *Dean*,
CHARLES E. GREENE, A.M., C.E.,
WILLIAM H. PETTEE, A.M.,
JOSEPH B. STEERE, PH.D.,
EDWARD L. WALTER, PH.D.,
ISAAC N. DEMMON, A.M.,
ALBERT H. PATTENGILL, A.M.,
MORTIMER E. COOLEY, M.E.,
WOOSTER W. BEMAN, A.M.,
VICTOR C. VAUGHAN, PH.D., M.D.,
THOMAS M. COOLEY, LL.D.,
CHARLES S. DENISON, M.S., C.E.,
HENRY S. CARHART, A.M.,
RAYMOND C. DAVIS, A.M.,
VOLNEY M. SPALDING, A.B.,
HENRY C. ADAMS, PH.D.,
CALVIN THOMAS, A.M.,
BURKE A. HINSDALE, PH.D.,
RICHARD HUDSON, A.M.,
ALBERT A. STANLEY, A.M.,
JOHN DEWEY, PH.D.,

* A dagger (†) preceding a student's name indicates that he pursues studies, for the whole or a part of the year, in more than one Department of the University.

FRANCIS W. KELSEY, PH.D.,
OTIS C. JOHNSON, PH.C., A.M.,
PAUL C. FREER, PH.D., M.D.,
ANDREW C. McLAUGHLIN, A.B., LL.B.,
JOSEPH B. DAVIS, C.E.,
ASAPH HALL, JR., PH.D.,
ISRAEL C. RUSSELL, M.S., C.E.,
WARREN P. LOMBARD, A.B., M.D.,
JACOB E. REIGHARD, PH.B.,
THOMAS C. TRUEBLOOD, A.M.,
JOHN C. ROLFE, PH.D.,
P. R. DE PONT, A.B., B.S., *Registrar*,
CLARENCE G. TAYLOR, B.S.,
GEORGE HEMPL, PH.D.,
EDWARD D. CAMPBELL, B.S.,
JOSEPH H. DRAKE, A.B.,
FRED N. SCOTT, PH.D.,
FRANK N. COLE, PH.D.,
FREDERICK G. NOVY, Sc.D., M.D.,
ALEXANDER ZIWET, C.E.,
GEORGE W. PATTERSON, JR., A.M., S.B.,
CARL W. BELSER, PH.D.,
GEORGE A. HENCH, PH.D.,
FRANK C. WAGNER, A.M., B.S.,
GOTTHELF C. HUBER, M.D.,
FRED M. TAYLOR, PH.D.,
ALVISO B. STEVENS, PH.C.,
DAVID E. SPENCER, A.M.,
*WILLIAM MUSS-ARNOLT, PH.D.,
JOSEPH L. MARKLEY, PH.D.,
WILLARD K. CLEMENT, PH.D.,
MORITZ LEVI, A.B.,
FRED MORLEY, C.E.,
ELMER A. LYMAN, A.B.,
HIRAM A. SOBER, A.B.,
GEORGE O. HIGLEY, B.S.,
ARTHUR G. HALL, B.S.,
GEORGE H. MEAD, A.B.,
ALFRED H. LLOYD, A.M.,
RAYMOND L. WEEKS, A.M.,
JONATHAN A. C. HILDNER, A.B.,
HERMAN V. AMES, PH.D.,

*Appointed Acting Assistant Professor of Oriental Languages, February, 1893.

GEORGE REBEC, PH.B.,
ERNST VOSS,
DAVID M. LICHTY, M.S.,
GEORGE H. ROWE, B.S.,
JOHN O. REED, PH.M.,
BENJAMIN P. BOURLAND, A.M.,
JOHN R. EFFINGER, PH.B.,
LORENZO N. JOHNSON, A.M.,
HERBET F. DE COU, A.M.,
ELMER L. ALLOR, B.S.,
HENRY B. WARD, PH.D.,
ERNST H. MENDEL, A.M.,
LAWRENCE MCLOUTH, A.B.,
GEORGE F. METZLER, PH.D.
EARLE W. DOW, A.B.
*POMEROY LADUE, B.S.,
†EUGENE LESER, PH.D.,

Other Instructors and Assistants.

ALICE L. HUNT,
MOSES GOMBERG, M.S.,
BERNHARD C. HESSE, PH.C.,
EUGENE H. ROBERTSON, PH.B.,
CHARLES H. COOLEY, A.B.,
FRANK H. DIXON, PH.B.,
WILLIAM A. KICKLAND, B.S.,
PAUL H. SEYMOUR, B.S.

STUDENTS.†

HOLDER OF THE ELISHA JONES CLASSICAL FELLOWSHIP.

NAME.	RESIDENCE.
Clarence Linton Meader, A.B., Greek; Latin; Classical Archæology.	<i>Battle Creek.</i>

**CANDIDATES FOR AN ADVANCED DEGREE, AND OTHER
RESIDENT GRADUATES.**

NAME.	RESIDENCE.
Elmer Louis Allor, B.S., 1892, Theoretical Astronomy; Practical Astronomy; Hydrographic Surveying.	<i>Ann Arbor.</i>

*Appointed Instructor in Mathematics, February, 1893.

†Appointed Instructor in French, February, 1893.

‡The principal subjects of study pursued by candidates for an advanced degree are indicated under their respective names.

- Albert Algernon Atkinson, Ph.B., *Ohio Univ.*, 1891, *Nelsonville, O.*
Organic Chemistry; Physics; Analytical Chemistry.
- Allison Wix Augir, A.B., *Hillsdale College*, 1890, *Hillsdale.*
Organic Chemistry; Physics; General Chemistry.
- Warren Babcock, Jr., B.S., *Mich. Agr. Coll.*, 1890, *Agricultural College.*
- Flora Gale Barnes, Ph.B., *Albion College*, 1890, *Kalamazoo.*
- Blanche Kingsbury Barney, B.L., 1889, *Ann Arbor.*
English; American History; Pedagogy.
- Jessie Irene Beal, B.S., *Mich. Agr. Coll.*, 1890, *Agricultural College.*
- William Warner Bishop, A.B., 1892, *Detroit.*
Greek; Latin; Pedagogy.
- Mamah Bouton Borthwick, A.B., 1892, *Oak Park, Ill.*
English; Philosophy; French.
- Benjamin Parsons Bourland, A.M., 1890, *Ann Arbor.*
French; Spanish; History.
- Charles Ambrose Bowen, A.B., 1892, *Marathon.*
History of Philosophy; Hebrew; Hellenistic Greek
- Gertrude Tamora Breed, A.B., 1888, *Ann Arbor.*
Latin; German; Æsthetics.
- Kennedy Brooks, A.B., *Univ. of Wooster*, 1878, A.M.,
Univ. of Wooster, 1881, *Springfield, Ill.*
Political Economy; American History; Political Philosophy.
- Mattie Ormsby Campbell, B.S., 1892, *Ann Arbor.*
- Lindley Daniel Clark, A.B., *Earlham College*, 1886, *Carthage, Ind.*
American History; Political Economy; English.
- Ida May Clendenin, B.S., *Univ. of Missouri*, 1886, *Mexico, Mo.*
Vegetable Physiology; Cryptogamic Botany; Organic Chemistry.
- Edwin Raymond Cole, B.S., 1892, *Watrousville.*
Physics; Mathematics; Music.
- Charles Horton Cooley, A.B., 1887, *Ann Arbor.*
Political Economy; Sociology; Statistics.
- Heber Doust Curtis, A.B., 1892, *Detroit.*
Greek; Latin; Classical Archæology.
- John Patterson Davis, A.B., 1885, *Omaha, Neb.*
Political Economy; English History; American History.
- Frank Haigh Dixon, Ph.B., 1892, *Ann Arbor.*
Political Economy; American History; European History.
- Clinton Emerson Dolbear, A.M.B., *Tufts Coll.*, 1892, *Somerville, Mass.*
General Chemistry; Physics; Organic Chemistry.
- Henry Woolsey Douglas, B.S., 1890, *Ann Arbor.*
Mechanical Engineering.
- John Robert Effinger, Jr., Ph.B., 1891, *Ann Arbor.*
French; German; History.
- Virginia Davis Farmer, Ph.B., 1891, *Chattanooga, Tenn.*
English; History of Philosophy; Æsthetics.
- Augusta Lee Giddings, B.L., *Univ. of Wis.*, 1890, *Ann Arbor.*
French; English; Æsthetics.

- Moses Gomberg, M.S., 1892, *Ann Arbor.*
Organic Chemistry; Physiology; Histology.
- George Alfred Goodenough, B.S., *Mich. Agr. Coll.*,
1891, *Agricultural College.*
- Mary Jeanette Gracc, B.L., 1892, *Ann Arbor.*
- Frederic Dexter Green, A.B., 1892, *Berlin Falls, N. H.*
Greek; Latin; Greek History.
- Enoch Horton Harriman, B.L., 1892, *Fenwick.*
- Helen Louise Hatch, B.L., 1891, *Bay City.*
Philosophy; German; English Literature.
- Wilber Olin Hedrick, B.S., *Mich. Agr. Coll.*, 1891, *Agricultural College.*
Political Economy; English Literature; History.
- Gilbert Henry Hicks, B.S., *Mich. Agr. Coll.*, 1892, *Agricultural College.*
Botany; Bacteriology; Animal Morphology.
- George Oswin Higley, B.S., 1891, *Ann Arbor.*
General Chemistry; Physiology; Physiological Chemistry.
- Jonathan August Charles Hildner, A.B., 1890, *Ann Arbor.*
German Literature; Middle High German; English Literature.
- Theodore Henry Hinchman, A.B., 1891, *Detroit.*
- Ellen Clarinda Hinsdale, A.B., *Adelbert College*, 1885, *Ann Arbor.*
German Literature; Pedagogy; French.
- Ella Adelaide Knapp, A.M., 1890, *Kalamazoo.*
American Literature; Anglo-Saxon; American History.
- Toyogiro Kotegawa, *College of Tokio*, *Tokio, Japan.*
Political Economy; European History; Political Philosophy.
- Edward Reed Loud, A.B., *Albion College*, 1892, *Albion.*
Latin; German; American History.
- Elmer Adelbert Lyman, A.B., 1886, *Ann Arbor.*
Mathematics; Mechanics; Astronomy.
- Dora Ella Kennedy Matthews, B.L., 1887, *Grand Rapids.*
English; Animal Morphology; Physiological Psychology.
- Mattie Elder McFarland, B.S., *Amity College*, 1890, *Barnard, Mo.*
- Aura Maud Miller, B.L., 1890, *Ann Arbor.*
- Cyrus B. Newcomer, A.B., *Carthage College*, 1889, *Mount Morris, Ill.*
Latin; Greek; Sanskrit.
- Jessie Lillian Newlin, A.B., *Earlham College*, 1889, *Carthage, Ind.*
- Flora Oakley, A.B., 1891, *Ann Arbor.*
Latin; Greek; Classical Archæology.
- Stephen Farnum Peckham, A.M., *Brown Univ.*, 1870, *Ann Arbor.*
Chemistry; Philosophy; Lithology.
- George Rebec, Ph.B., 1891, *Ann Arbor.*
Rhetoric; Logic; Ethics.
- John Orcn Reed, Ph.B., 1885, *Ann Arbor.*
Physics; Mathematics; Mechanics.
- Robert Minard Reid, A.B., 1891, *Salem, Ind.*
- Eugene Herbert Robertson, Ph.B., 1891, *Ogden Centre.*
Physiological Chemistry; Physiology; Bacteriology.

Henry Arthur Sanders, A.B., 1890, Greek; Latin; Sanskrit.	<i>Livermore, Me.</i>
Edmond Lindsay Sanderson, A.B., 1892,	<i>Detroit.</i>
Thomas Chalkley Severance, A.B., 1889, English Literature; Ethics; American History.	<i>Walled Lake.</i>
Paul Henry Seymour, B.S., 1892, General Chemistry; Analytical Chemistry; Astronomy.	<i>LaPorte, Ind.</i>
Ella Louise Smith, A.B., <i>Ohio Wesleyan Univ.</i> , 1892, <i>Tan Wert, O.</i>	
James Allen Smith, A.B., <i>University of Missouri</i> , 1887, <i>Kansas City, Mo.</i>	
Mary Lena Smith, B.L., <i>Olivet College</i> , 1886, English Literature; Anglo-Saxon; German.	<i>Somerset.</i>
Gertrude Mary Sudworth, A.B., 1885,	<i>Ann Arbor.</i>
Aldred Scott Warthin, A.M., 1890, English Literature; German; Music.	<i>Ann Arbor.</i>
Marilla Caroline Wooster, B.S., <i>Hillsdale College</i> , 1875, <i>Hillsdale.</i> English; Philosophy; Pedagogy.	

The following students, enrolled in other Departments, are also candidates for an advanced degree in this Department. See page 118.

ENROLLED IN THE DEPARTMENT OF MEDICINE AND SURGERY.

Harry James Kennedy, A.B., 1890, Physiology; Histology; Hygiene.	<i>Ionia.</i>
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ENROLLED IN THE DEPARTMENT OF LAW.

Sylvanus Wright Curtiss, Ph.B., 1892, Political Economy; Philosophy; American History.	<i>Monroe.</i>
Ernest Linwood Finley, A.B., <i>Univ. of Wooster</i> , 1891, <i>Mt. Pleasant, O.</i> Political Economy; International Law; American History.	
William Henry Merner, A.B., 1892, Political Economy; Philosophy; American History.	<i>Cedar Falls, Ia.</i>
Hinckley Smith, A.B., <i>Miami University</i> , 1891, <i>Oxford, O.</i> Political Economy; American History; Constitutional Law.	
Arthur J. Tuttle, Ph.B., 1892, Political Economy; English History; American History.	<i>Leslie.</i>

CANDIDATES FOR A MASTER'S DEGREE AND FOR A DEGREE IN ENGINEERING, STUDYING IN ABSENTIA.

NAME.	RESIDENCE.
Wirt McGregor Austin, Ph.B., 1887, Political Economy; Constitutional Law; American Literature.	<i>Lapeer.</i>
Virginia Beauchamp, A.B., 1889, Latin; German; French;	<i>Colorado Springs, Col.</i>
Clarence Galen Campbell, Ph.B., 1888, Bacteriology; Physiology; Histology.	<i>New York, N. Y.</i>
Mary Sophia Case, A.B., 1884, British Philosophy; Political Philosophy; English Literature.	<i>Wellesley, Mass.</i>

- Eda May Clark, B.L., 1891, *Wellesley, Mass.*
Analytical Chemistry; Organic Chemistry; Geology.
- Elizabeth Rebecca Clark, A.B., 1888, *Nashville, Tenn.*
English Literature; Pedagogy; Philosophy.
- Rossetter Gleason Cole, Ph.B., 1888, *Ripon, Wis.*
Music; German; Æsthetics.
- Allen Lysander Colton, A.B., 1890, *Mount Hamilton, Cal.*
Astronomy; Optics; Meteorology.
- Charles Hall Cook, A.B., 1874, *Billings, Mon.*
English Literature; History; Philosophy.
- George Ellsworth Dawson, A.B., 1887, *Brookings, S. Dak.*
English Literature; History; Political Economy.
- Edwin De Barr, Ph.B., 1892, *Norman, O. T.*
Organic Chemistry; English; General Chemistry.
- William Worth Eagan, Ph.B., 1889, *Ann Arbor.*
Latin; Anglo-Saxon; English Literature.
- Ida Bertha Paulina Fleischer, Ph.B., 1892, *Ludington.*
German; Philosophy; Pedagogy.
- Joseph Kendall Freitag, B.S., 1890, *Chicago, Ill.*
Civil Engineering.
- Ellen Elizabeth Garrigues, A.B., 1889, *Ann Arbor.*
English Literature; French; Philosophy.
- Robert Campbell Gemmell, B.S., 1884, *Pendleton, Ore.*
Civil Engineering.
- William Ellis Goddard, A.B., 1890, *Oak Park, Ill.*
Ethics; English; Æsthetics.
- David Emil Heineman, Ph.B., 1887, *Detroit.*
English Drama; History of the Fine Arts; International Law.
- George Matthews Hewey, B.L., 1887, *Charles City, Ia.*
English Literature; History; Philosophy.
- Frances Hinkley, B.S., 1890, *Shelbyville, Ky.*
Analytical Chemistry; Organic Chemistry; Geology.
- William Henry Honey, A.B., 1880, *Monroe.*
Latin; Greek; Sanskrit.
- Violet De Lille Jayne, A.B., 1887, *St. Paul, Minn.*
English Literature; German; History.
- Lilian Wyckoff Johnson, A.B., 1891, *Memphis, Tenn.*
History; American History; Political Economy.
- Emory Davis Kirby, A.B., 1888, *Battle Creek.*
Greek; Philosophy; Latin.
- Abraham Lincoln Knisely, B. S., 1891, *Geneva, N. Y.*
Analytical Chemistry; Botany; Physiological Chemistry.
- Rollo Glenroy Manning, B.S., 1890, *Wilmington, Del.*
Civil Engineering.
- William Andrew McAndrew, A.B., 1886, *Brooklyn, N. Y.*
English Drama; History; Pedagogy.
- Frank Thompson Merry, B.L., 1890, *Washington, D. C.*
History; American History; Political Economy.

Thomas Frank Moran, A.B., 1887, History; Political Economy; Social Science.	<i>St. Cloud, Minn.</i>
William Vaughan Moses, B.S., 1889, Mechanical Engineering.	<i>Philadelphia, Pa.</i>
Arthur Douglass Mott, B.S., 1892, Civil Engineering.	<i>Chicago, Ill.</i>
Loran David Osborn, A.B., 1891, Philosophy of Religion; Sociology; New Testament Greek.	<i>Grand Rapids.</i>
George Frederick Rush, A.B., 1889, History; Political Economy; American Literature.	<i>Chicago, Ill.</i>
Louis Carlton Sabin, B.S., 1890, Civil Engineering.	<i>Sault Ste. Marie.</i>
Lewis Severance, A.B., 1892, French; English; History.	<i>Florence, Wis.</i>
Fred Fraley Sharpless, B.S., 1888, Economic Geology; Metallurgy; Ore Dressing.	<i>Houghton.</i>
Lillie Maria Shaw, A.B., 1884, Greek; German; Botany.	<i>Bay City.</i>
Herbert Bradish Shoemaker, A.B., 1891, Constitutional Law; International Law; Political Economy.	<i>Boulder, Col.</i>
Louis Henry Shoemaker, B.S., 1889, Civil Engineering.	<i>Findlay, O.</i>
Albert Boynton Storms, A.B., 1884, Philosophy; History; English Literature.	<i>Detroit.</i>
Rufus Calvin Thayer, Ph.B., 1891, Constitutional Law; International Law; English Literature.	<i>Manistee.</i>
Lura Wallace Tozer, Ph.B., 1885, English Literature; German; French.	<i>New Orleans, La.</i>
John Arthur Van Arsdale, A.B., 1891, Constitutional Law; International Law; Political Economy.	<i>Buffalo, N. Y.</i>

UNDERGRADUATES.*

NAME.	DEGREE.	CREDIT.	RESIDENCE.
Michael Barnett Aaron,	Ph.B.	14	<i>Chicago, Ill.</i>
Curzon George Abbott,	B.S. (E.E.)		<i>Bellaire.</i>
Ida May Abbott,			<i>Toledo, O.</i>
Inez Louise Abbott,	A.B.	61	<i>Holt.</i>
Charles Wallace Adams,	B.L.	55	<i>Utica.</i>
Frank De Forest Adams,	A.B.	34	<i>Marshall.</i>
John Quincy Adams,	B.L.	58	<i>Utica.</i>

*The abbreviations in the column headed DEGREE indicate the degree for which the student is studying. Where no abbreviation is given, the student is pursuing miscellaneous studies without being registered as a candidate for a degree. The figures in the column headed CREDIT indicate the number of hours of work taken by candidates for degrees prior to the beginning of the current academic year, 1892-93, and completed without conditions, or received on advanced standing. By an hour of work is meant the equivalent of one exercise a week for one semester. Compare page 93.

Abraham Kohn Adler,	B.S. (Mech. E.)	105	<i>Chicago, Ill.</i>
Gerritt Henry Albers, A.B., <i>Hope College,</i>	A.B.	109	<i>Grand Rapids.</i>
Mary Elizabeth Alcott,			<i>Elgin, Ill.</i>
Mabel Aldrich,	A.B.		<i>Coldwater.</i>
William Irving Aldrich,	B.S. (C.E.)	31	<i>Coldwater.</i>
Elizabeth Walton Alexander,			<i>La Porte, Ind.</i>
Fred Alexander,	A.B.	84	<i>Detroit.</i>
Kirkland Barker Alexander,	B.S. (Mech. E.)		<i>Detroit.</i>
Bertha Alger,	Ph.B.	104	<i>Grand Rapids.</i>
Charles Brunson Allen,	A.B.	91	<i>Spring Arbor.</i>
Josephine Allen,	B.L.	92	<i>Omaha, Neb.</i>
Susie Helen Allen,	Ph.B.		<i>Grand Rapids.</i>
Sadie Maria Alley,	Ph.B.	72	<i>Detroit.</i>
Katharine Sprague Alvord,	A.B.	92	<i>Sandusky, O.</i>
Loowina Hattie Amberg,	B.L.	112	<i>Battle Creek.</i>
Robert Lewis Ames,	B.S. (Mech. E.)	70	<i>Pokagon.</i>
Cooley Cash Anderson,	B.L.		<i>Midland.</i>
Duncan Anderson, Jr.,	B.S. (Chem.)	102	<i>Ogdensburg, N. Y.</i>
Elsie Grace Anderson,	A.B.	25	<i>Ann Arbor.</i>
Louis Warner Anderson, B.S., <i>Albion College,</i>	B.S. (C.E.)		<i>Albion.</i>
Lucy Sadie Andrews,	B.L.	106	<i>Saginaw, East Side.</i>
William Holmes Andrews,	Ph.B.	58	<i>Canandaigua, N. Y.</i>
Harry Doughten Appleby,	B.S. (C.E.)	46	<i>Wilmington, Del.</i>
Kate Oretta Arnold,	A.B.		<i>Ypsilanti.</i>
Charles Gillman Atkins,	B.S. (E.E.)	126	<i>Tiffin, O.</i>
Agnes Christeen Atwood,	B.L.	31	<i>Mt. Clemens.</i>
Robert Oliver Austin,	Ph.B.		<i>Morrice.</i>
Walter Merville Austin,	B.S. (E.E.)	30	<i>Ann Arbor.</i>
Earl D. Babst,	Ph.B.	80	<i>Crestline, O.</i>
Winnifred Holland Bacon,	B.S.		<i>Saginaw, East Side.</i>
Annie Louise Bacorn,	B.L.		<i>Chicago, Ill.</i>
Samuel Herman Baer,	B.S.	3	<i>Fort Smith, Ark.</i>
Ruth Gertrude Bagley,	A.B.	99	<i>Detroit.</i>
Anna May Bailey,	B.L.	102	<i>Tecumseh.</i>
Arthur Gee Bailey, B.S., <i>Coe</i> <i>College,</i>	B.S. (Chem.)		<i>Cedar Rapids, Ia.</i>
Hattie May Bailey,	B.L.	48	<i>Grand Rapids.</i>
Lissa Florence Baily,	Ph.B.		<i>Bedford, Ia.</i>
Charles Baird,	A.B.	45	<i>Chicago, Ill.</i>
James Baird,	B.S. (C.E.)		<i>Chicago, Ill.</i>
Fred Joseph Baker,			<i>Ishpeming.</i>

Harry Paxson Baker,	B.S. (Mech. E.)	22	<i>Saginaw.</i>
Verdie Jane Baker,	B.L.	95	<i>Woodview, O.</i>
Warren Dwight Baker,	A.B.	100	<i>Buchanan.</i>
Hadley Baldwin,	B.S. (C.E.)	104	<i>Doe Run, Pa.</i>
George Edward Ball,	A.B.	22	<i>Marquette.</i>
Edna Lenore Ballard,	B.L.		<i>Ann Arbor.</i>
Isabel Adelaide Ballou,	Ph.B.	46	<i>Bay City.</i>
Fred Cornelius Baluss,			<i>Ogden.</i>
Charles Edwin Bancker,	A.B.	32	<i>Jackson.</i>
Blanche Beatrice Banta,	A.B.	81	<i>Plankinton, S. Dak.</i>
Bertha Emily Barber,			<i>Norwalk, O.</i>
Henri Newton Barber,	A.B.	84	<i>Chicago, Ill.</i>
Bettie Tichenor Barcus,			<i>Ann Arbor.</i>
Mary Jane Barmby,	A.B.	78	<i>Bay City.</i>
Florence Emma Barnard,	A.B.	34	<i>Saginaw.</i>
Mortimer Grant Barnes,			<i>Loretto, Neb.</i>
Claribel Ruth Barnett,	Ph.B.	97	<i>Kent, O.</i>
Abby Louise Barney,	Ph.B.	28	<i>Ann Arbor.</i>
Bertha Carmelia Barney,	B.L.		<i>Ann Arbor.</i>
Edwin Abbott Barnum,			<i>Denver, Col.</i>
Maude Augusta Barrett,	A.B.	86	<i>Kalamazoo.</i>
Nellie Prescott Barrett,	B.S.	59	<i>Chicago, Ill.</i>
Margaret Rosanna Barrette,			<i>Davenport, Ia.</i>
Lina Dutcher Barrows,			<i>Ann Arbor.</i>
Archie Ernest Bartlett,	A.B.	56	<i>Cardington, O.</i>
Mary Luella Batchelder,	B.L.		<i>Warrensburg, Ill.</i>
Arthur Dougall Bate,	B.L.		<i>Saginaw.</i>
Thomas Wilson Battin,	B.S. (Mech. E.)	63	<i>Omaha, Neb.</i>
William Guy Bauer,	*B.S.	30	<i>Hastings.</i>
Burdette C. Baumgardner,			<i>Manistee.</i>
William Frederick Baur,	Ph.B.	93	<i>Ann Arbor.</i>
Anna Rowena Brooks Bayer,	A.B.	25	<i>Clermont, Pa.</i>
Mary Griffith Beagle,	B.L.	8	<i>Flint.</i>
Lester Hayes Beals,	A.B.	32	<i>Grand Blanc.</i>
Edward Scott Beck,	A.B.	102	<i>Holton, Kan.</i>
Archibald Lachlan Becker,	B.S. (Mech. E.)	86	<i>Hesperia.</i>
Ira Alanson Beddow,	Ph.B.		<i>Birmingham.</i>
Maude Benjamin Bedell,	A.B.	95	<i>Jackson.</i>
Fern Amelia Beebe,	Ph.B.	95	<i>Big Rapids.</i>
Ira Charles Belden,	Ph.B.	99	<i>Kaneville, Ill.</i>
Howard Bement,	Ph.B.		<i>Lansing.</i>
John Adam Bendinger,	B.S.	31	<i>Cincinnati, O.</i>
William Hoyt Bennett,	B.L.		<i>Ravenswood, Ill.</i>

Emma Bettes,	Ph.B.	29	<i>Washington, D. C.</i>
Mattie Ellen Bettes			<i>Grand Rapids.</i>
Alice Biester,	A.B.	32	<i>Chicago, Ill.</i>
William Gray Billings,	B.L.	28	<i>Davison Station.</i>
Eugene Beasley Binford,	B.L.	10	<i>Marshalltown, Ia.</i>
Harriet Bingham,	B.L.		<i>Dubuque, Ia.</i>
James Pyper Bird,	A.B.	104	<i>Ann Arbor.</i>
John Charles Bird,	B.S. (Mech. E.)	66	<i>Jackson.</i>
Anna Mildred Black,			<i>Glen Ebon, O.</i>
John Verkes Blackwood,	B.S. (Mech. E.)	95	<i>Northville.</i>
August Blaess,	B.S. (C.E.)	31	<i>Ann Arbor.</i>
James Blair, Jr.,	Ph.B.	73	<i>Grand Rapids.</i>
Jamie Maud Blanchard,	B.L.	66	<i>Los Angeles, Cal.</i>
Edmond Block,	A.B.	32	<i>Chattanooga, Tenn.</i>
Arthur Collier Bloomfield,	A.B.	39	<i>Jackson.</i>
Mary Putnam Blount,			<i>Byron, Ill.</i>
Georgiana Cleis Blunt,	Ph.B.	45	<i>Ann Arbor.</i>
James Griswold Blunt,			<i>Ann Arbor.</i>
Henry William Charles Bodecker,	B.S.	16	<i>New York, N. Y.</i>
Harry Edward Bodman,	Ph.B.		<i>Toledo, O.</i>
William Edward Bolles,	B.L.	22	<i>Detroit.</i>
Harry Jonas Bond,	B.S.		<i>Holt.</i>
William Chalmers Borst,	B.S. (C.E.)	15	<i>Denver, Col.</i>
Will Hazen Boughton,	B.S. (C.E.)	93	<i>Norwalk, O.</i>
Norman Trenholm Bourland,	B.L.		<i>Peoria, Ill.</i>
Philip Daggett Bourland,	B.S. (Chem.)	41	<i>Peoria, Ill.</i>
Eva May Bowen,	A.B.		<i>Marathon, O.</i>
Carl Boyd,	Ph.B.	61	<i>Ann Arbor.</i>
Marcus Calvin Boylan,	B.S.	70	<i>Ann Arbor.</i>
Minnie Angeline Boylan,	Ph.B.		<i>Ann Arbor.</i>
Fred Ellsworth Bradfield,	A.B.		<i>Grand Rapids.</i>
Thomas Parks Bradfield,	Ph.B.	61	<i>Grand Rapids.</i>
Ernest Story Braymer,	B.L.	59	<i>Chicago, Ill.</i>
Joseph Brennemann, Jr.,	Ph.B.,	48	<i>Peru, Ill.</i>
Harry Lewis Bridgman,	B.S. (E.E.)	19	<i>Flint.</i>
Clare Briggs,	B.S. (Chem.)	61	<i>Battle Creek.</i>
Frederic Fant Briggs,	A.B.	101	<i>Mt. Gilead, O.</i>
John Jerome Brinckerhoff,	Ph.B.	94	<i>Lockport, Ill.</i>
Frank Briscoe,	A.B.	32	<i>Detroit.</i>
Nina Edith Bristol,	A.B.	87	<i>Mason.</i>
Deward Augustus Britten,	B.S. (E.E.)	3	<i>Ann Arbor.</i>
Lillian May Bromley,			<i>Detroit.</i>

Christine Frederica Bronson, Ph.B.	82	<i>Ann Arbor.</i>
John Bert Brooks, A.B.	32	<i>Ann Arbor.</i>
Emma Judith Broomell, B.S., <i>Swarthmore College,</i> B.S.		<i>Baltimore, Md.</i>
Albert Thaddeus Brott, A.B.		<i>Spring Arbor.</i>
Lelia Brouillette,		<i>Terre Haute, Ind.</i>
Alice Brown, A.B.		<i>Grand Rapids.</i>
J. Earl Brown, B.S.		<i>Lansing.</i>
Hortense Valentine Bruce,		<i>Burnside.</i>
Benjamin Franklin Buck, A.B.	108	<i>Ann Arbor.</i>
Gertrude Buck, B.S.	64	<i>Kalamazoo.</i>
Salie Edna Buck,		<i>Winona, Minn.</i>
Harry Copley Buell, B.S. (Mech.E.)		<i>Ann Arbor.</i>
Ella May Bullard, A.B.	32	<i>Geneva, N. Y.</i>
Ernest Nelson Bullock, A.B.	50	<i>Randolph, Mass.</i>
Frederick Henry Burdick, B.S. (C.E.)	8	<i>Saginaw, East Side.</i>
Abraham Lincoln Burgan, B.S. (E.E.)	12	<i>Lake Linden.</i>
James Burgan, B.S. (C.E.)	53	<i>Lake Linden.</i>
Harry Owen Burkert,		<i>Detroit.</i>
Cameron Clarke Burns, A.B.	80	<i>Kalamazoo.</i>
Mary Louise Burridge,		<i>Tecumseh.</i>
Lewis Hiram Burton, B.L.	3	<i>Cedar Rapids, Ia.</i>
Fred Joseph Bush,		<i>Kalamazoo.</i>
Platt Richard Bush, B.S. (C.E.)	40	<i>Saginaw, East Side.</i>
Nina M. Bushnell, B.L.	21	<i>Flint.</i>
Jennie Buttolph,		<i>Pontiac.</i>
Mary Ruth Butts, B.L.	68	<i>Memphis, Tenn.</i>
Leo Martin Butzel, Ph.B.	57	<i>Detroit.</i>
George Jason Cadwell, Ph.B.	77	<i>Chicago, Ill.</i>
Agnes Ophelia Cady,		<i>Ann Arbor.</i>
Eliza Cady,		<i>Ann Arbor.</i>
Mary Lavinia Cady,		<i>Hersey.</i>
Walter John Cahill, B.S. (C.E.)		<i>Chicago, Ill.</i>
Elizabeth Francis Camp,		<i>Sandusky, O.</i>
Melancthon Woolsey Campau, B.S. (Mech.E.)		<i>Detroit.</i>
Archibald Campbell, Ph.B.		<i>Manhattan, Ill.</i>
Charles Cisco Campbell, Ph.B.	43	<i>Leiter's, Ind.</i>
Robert Clair Campbell, B.S.	70	<i>Ypsilanti.</i>
William Aulls Campbell, M. D., B.S. (Bio.)	127	<i>Ann Arbor.</i>
William Bradford Canfield, Ph.B.	60	<i>Detroit.</i>
David Ewart Carman, A.B.		<i>Berrien Springs.</i>

Charles Knapp Carpenter,	Ph.B.		<i>Baileyville, Ill.</i>
June Carpenter,	Ph.B.	66	<i>Ann Arbor.</i>
May Carpenter,	Ph.B.	111	<i>Ann Arbor.</i>
Iris Carr,	B.L.	42	<i>Ann Arbor.</i>
Lauren Duane Carr,			<i>Brayton, S. Dak.</i>
Mabel Emma Carr,			<i>Brayton, S. Dak.</i>
Mary Ella Carter,	B.L.	95	<i>Andover, Mass.</i>
Ada Malvina Cartwright,	B.L.		<i>Oregon, Ill.</i>
Emma Maude Caswell,	B.L.	32	<i>Birmingham.</i>
Martha Holway Chad- bourne,	Ph.B.	95	<i>Vinton, Ia.</i>
Harry Oliver Channon,	B.S. (E.E.)	94	<i>Quincy, Ill.</i>
Artena Chapin,	A.B.		<i>Fort Wayne, Ind.</i>
Clarence Willard Chapin,	B.L.		<i>DeLand, Ill.</i>
Gail Hamilton Chapman,	B.L.	8	<i>Lansing.</i>
Henry Oliver Chapoton,	B.S.	68	<i>Mt. Clemens.</i>
William Herbert Charnley,	Ph.B.	86	<i>Goshen, Ind.</i>
William Sylvester Cheever,	B.L.	101	<i>Ann Arbor.</i>
Howard Everett Chickering,	B.S. (Mech.E.)	72	<i>Ann Arbor.</i>
Wallace Wiley Chickering,	B.S. (Mech.E.)	51	<i>Ann Arbor.</i>
Elaine Childs,	B.L.	17	<i>Washington, D. C.</i>
Ward Nelson Choate,	Ph.B.	5	<i>Jackson.</i>
Bertha Amy Christie,			<i>Chicago, Ill.</i>
Katharine Margaret Chris- topher,	B.L.	34	<i>Saginaw, East Side.</i>
Clarence Nathan Church,	A.B.	38	<i>Alma.</i>
Albert Loring Clark,	B.S. (Mech.E.)	108	<i>Ann Arbor.</i>
Clarence Day Clark,	Ph.B.		<i>Northville.</i>
Harry Walter Clark,	B.S. (Mech.E.)	69	<i>Ann Arbor.</i>
Walter Roy Clayton,			<i>Troy, O.</i>
Holbrook Gilson Cleave- land,	A.B.	104	<i>Plymouth, Ind.</i>
Laura Eoline Clemens,			<i>Ashtabula, O.</i>
Philip Russell Coats,	B.S. (E.E.)	13	<i>Saginaw, East Side.</i>
Katharine Lawrence Codd,			<i>Detroit.</i>
Raymond Lynn Coffin,	A.B.	8	<i>Grand Rapids.</i>
Isidore Cohen,	B.S. (Mech.E.)	2	<i>Chicago, Ill.</i>
Burnham Colburn,	B.S. (C.E.)	24	<i>Detroit.</i>
Bessie Maude Colby,	B.L.		<i>Adamsville.</i>
Pearl Leone Colby,	B.S.	27	<i>Ann Arbor.</i>
Harry Arthur Cole,	B.L.	12	<i>Hinsdale, Ill.</i>
Oscar Phipps Cole,	A.B.		<i>Berlin Falls, N. H.</i>
Frederick William Backus Coleman,	A.B.	4	<i>Detroit.</i>

Grace Louise Collins,	Ph.B.	13	<i>Peotone, Ill.</i>
Mabel Colton,	A.B.		<i>Wayne.</i>
Mary Clara Colver,	B.L.	95	<i>Sandusky, O.</i>
Thomas Louis Comparett,	A.B.	90	<i>Hicksville, O.</i>
Harold Orange Comstock,	Ph.B.		<i>Owosso.</i>
John Chassell Condon,	B.S. (E.E.)	21	<i>Ann Arbor.</i>
Jesse I. Conklin,	B.S. (C.E.)	85	<i>Springport.</i>
Alfred Beethoven Connable,	B.L.	64	<i>Petoskey.</i>
Merritt S. Conner,	B.S. (E.E.)	11	<i>Paw Paw.</i>
Lettie Lenore Conover,	B.S.	25	<i>Coldwater.</i>
Charles Henry Conrad,	B.L.	46	<i>Chicago, Ill.</i>
Lola Helen Conrad,	B.S.	96	<i>Ann Arbor.</i>
Charles Goldsmith Cook,	A.B.		<i>Detroit.</i>
Frances Clare Cook,	B.L.	38	<i>Corunna.</i>
Samuel Richard Cook,			<i>Ann Arbor.</i>
William Wallace Cook,	A.B.	16	<i>Chicago, Ill.</i>
Clarence Sidney Cooke,			<i>Flat Rock.</i>
Spencer Pearson Cooke,	B.S. (E.E.)	8	<i>Monroe.</i>
Anna Elizabeth Cool,	Ph.B.		<i>Decatur, Ill.</i>
Mary Beatrice Cooley,			<i>Ann Arbor.</i>
Maud Irene Cooley,	A.B.	4	<i>Canandaigua, N. Y.</i>
Rose Mary Cooper,			<i>St. Louis, Mo.</i>
Clara Fred Cemanthia Copley,	A.B.	23	<i>Ludington.</i>
John Corbin, Jr.,	Ph.B.	43	<i>New Harmony, Ind.</i>
Hetty Gertrude Cornell,			<i>St. Clair.</i>
Genevieve Cornwell,	B.L.	57	<i>Ann Arbor.</i>
William Clayton Coryell,	B.S. (Mech.E.)		<i>Grand Rapids.</i>
Charles Herbert Covell,	A.B.	62	<i>Napoleon.</i>
Arthur Howe Covert,	A.B.	88	<i>Ann Arbor.</i>
Howard Malcom Cox,	B.S. (Mech.E.)	35	<i>Chicago, Ill.</i>
Mabel Crabbe,	B.L.	98	<i>Chicago, Ill.</i>
John Jay Crain,	B.S. (Mech.E.)		<i>Akron, O.</i>
Winifred Rose Craine,	B.L.	32	<i>Detroit.</i>
Alice Doris Cramer,	Ph.B.	107	<i>Ann Arbor.</i>
Faust Franklin Crampton,	B.S. (E.E.)	43	<i>Monroe.</i>
Henry Shepherd Crane,	A.B.	8	<i>Detroit.</i>
Katharine Andrew Crane,	B.L.	64	<i>La Porte, Ind.</i>
Harrison Parker Crego,	A.B.	87	<i>Jackson.</i>
Albert Robinson Crittenden,	B.L.	50	<i>Frankfort.</i>
William Edward Crooker,			<i>Anthony, Kan.</i>
Jennie Amelia Crosby,			<i>Detroit.</i>
Lawrence Ludger Croze,	B.L.	9	<i>Houghton.</i>
Galen Greenfield Crozier,	B.S.	61	<i>Ann Arbor.</i>

Hubert Richmond Crozier,	B.L.	28	<i>Ann Arbor.</i>
Henry LeRoy Crummer,	B.S.	92	<i>Omaha, Neb.</i>
William Ernest Cullen, Jr.,	A.B.	77	<i>Helena, Mon.</i>
Arthur Gerrish Cummer,	B.S. (Meeh.E.)		<i>Cadillac.</i>
Waldo Emerson Cummer,	B.S. (Meeh.E.)		<i>Cadillac.</i>
Alexander Cumming,	B.L.	53	<i>Oil City, Pa.</i>
Edward Page Cummings,	Ph.B.	95	<i>Grand Haven.</i>
Edward Robert Cunningham,	Ph.B., <i>Albion Coll.</i> , B.S.	105	<i>Spring Arbor.</i>
William John Currer,	B.S. (C.E.)	95	<i>Chicago, Ill.</i>
Fred Richard Cutcheson,	B.S. (E.E.)	12	<i>Grand Rapids.</i>
Max Hartranft Cutcheon,	B.S. (E.E.)	45	<i>Grand Rapids.</i>
George Alfred Damon,	B.S. (E.E.)	61	<i>Ypsilanti.</i>
Herbert Allan Dancer,	B.L.	24	<i>Chelsea.</i>
Carrie Danforth,			<i>Ann Arbor.</i>
Effie Danforth,	Ph.B.		<i>Ann Arbor.</i>
Francis Potter Daniels,	A.B.	32	<i>Ionia.</i>
John Wesley Dasef,			<i>Sheridan.</i>
Alice Permele Davis,	B.L.	12	<i>Saginaw, East Side.</i>
Calvin Olin Davis,	B.L.	25	<i>Macomb.</i>
Jasper Case Davis,	B.S. (C.E.)	99	<i>Lansing.</i>
George Lawrence Davison,	B.S. (Chem.)	66	<i>Joliet, Ill.</i>
Edna Daisy Day,	B.L.	29	<i>East Orange, N. J.</i>
Paul Marley Day,	Ph.B.	112	<i>Detroit.</i>
Josiah Dearborn,	A.B.	61	<i>Effingham, N. H.</i>
Frank Henry Decke,	B.L.	107	<i>Lansing.</i>
Will Bellows Decker,	A.B.	5	<i>Battle Creek.</i>
John Henry Deitz,	B.S. (E.E.)		<i>Caro.</i>
Rose Demmon,	A.B.		<i>Ann Arbor.</i>
Almon Henry Demrick,	B.S. (E.E.)	71	<i>Roseville.</i>
Sara den Bleyker,	B.S.	75	<i>Kalamazoo.</i>
Henry Henderson Denham,	B.S. (Chem.)	91	<i>Flint.</i>
Charles Arza Denison,	B.L.	120	<i>Decatur, Ill.</i>
Martha Luella Denman,	A.B.		<i>Nokomis, Ill.</i>
Ernest J. Dennen,	A.B.	97	<i>Ann Arbor.</i>
William Sherman Dennis,	A.B.		<i>LeMoyne, O.</i>
Walter Dennison,	A.B.	93	<i>Ypsilanti.</i>
Mina Hannah Denton,			<i>Centerville.</i>
Alma Marguerite Desenberg,	Ph.B.	20	<i>Kalamazoo.</i>
Will De Witt,	B.S. (E.E.)		<i>Saginaw.</i>
Charles Edward De Wolf,	B.S. (Meeh.E.)	29	<i>Michigan City, Ind.</i>
Harriet Winona Dickerman,			<i>South Norwalk, Conn.</i>
Barlow Corning Dickey,			<i>Troy, O.</i>

Tobias Dickhoff,	A.B.	87	<i>Wellsburg, Ia.</i>
James Henry Dickson,	A.B.	62	<i>Portland, Ore.</i>
Lydia Dillbahner,	B.S.		<i>Nashville.</i>
Lydia Anne Dittman,	Ph.B.	24	<i>Romeo.</i>
Henry Perkins Dodge,	B.S. (E.E.)	101	<i>Toledo, O.</i>
Mattie Dolan,			<i>Lansing.</i>
Belle Donaldson,	A.B.	22	<i>West Bay City.</i>
Elspa Millicent Dopp,	B.L.	94	<i>Towne, Wis.</i>
Kate Elizabeth Dopp,	Ph.B.	105	<i>Towne, Wis.</i>
Charles Vincent Doran,			
A.B., <i>Detroit College,</i>	B.S. (E.E.)	125	<i>Detroit.</i>
William Henry Dorrance, Jr.,	B.S. (Mech.E.)	119	<i>Ann Arbor.</i>
Nina May Doty,	Ph.B.	28	<i>Ann Arbor.</i>
Herman J. Douds,	B.S. (E.E.)	47	<i>Canton, O.</i>
Horace Raymond			
Dougherty,	A.B.	5	<i>Peoria, Ill.</i>
Mabel Dougherty,	A.B.	38	<i>Peoria, Ill.</i>
Helen Louise Douglas,	Ph.B.		<i>Ann Arbor.</i>
William Downie,	B.S. (C.E.)		<i>Detroit.</i>
Myron LaFayette Downs,	A.B.	41	<i>South Evanston, Ill.</i>
Charles Drake,	Ph.B.	95	<i>Rochester, Ind.</i>
Charles Francis Drake,	B.S. (C.E.)		<i>Chicago, Ill.</i>
Vivian Surrey Drake,	B.L.	56	<i>East Saginaw.</i>
Marie Irenæus Drew,			<i>Big Rapids.</i>
Walter Wendell Drew,	A.B.	59	<i>Grand Rapids.</i>
Charles Edwin Driggs,	B.S.		<i>Adrian.</i>
Helen Eliza Dryer,	A.B.		<i>Fort Wayne, Ind.</i>
Genevieve Katharine Duffy,	A.B.	93	<i>Ann Arbor.</i>
Mary Ellen Duffy,	Ph.B.	66	<i>Ann Arbor.</i>
James Horace Dunbar,	B.S. (C.E.)	35	<i>Bay City.</i>
Miriam Dunbar,	B.S.	40	<i>South Bend, Ind.</i>
Anna Stuart Duncan,	B.L.		<i>Au Sable.</i>
Charles Henry Duncan,	Ph.B.	32	<i>Ann Arbor.</i>
John Denison Evarts			
Duncan,	B.S. (E.E.)	104	<i>Ann Arbor.</i>
John Dudley Dunham,	A.B.	58	<i>Columbus, O.</i>
Nellie Phœbe Dunham,	Ph.B.	96	<i>Wayne, Ill.</i>
Robert Wells Dunn,	B.S. (Mech.E.)	12	<i>Chicago, Ill.</i>
William LeRoy Dunn,			
Ph.C., M.D.,	B.S. (Bio.)	83	<i>Ann Arbor.</i>
Grant Henry Dunning,	B.S. (C.E.)	87	<i>Pettysville.</i>
Annie Dunster,	Ph.B.	32	<i>Ann Arbor.</i>
Augusta Hall Durfee,	A.B.	92	<i>Detroit.</i>

Louis Daniel Dwight,	B.S. (C.E.)	22	<i>Decatur.</i>
George Burlingame Dygert, Ph.B.		98	<i>Ann Arbor.</i>
Peter William Dykema,	B.L.	41	<i>Grand Rapids.</i>
James McEldowney Eakins, Ph.B.			<i>Englewood, Ill.</i>
Lucy Nash Eames,	B.S. (Bio.)	32	<i>Ann Arbor.</i>
Elizabeth Anna Eberle,	A.B.		<i>South Bend, Ind.</i>
Fred Albert Eckert,			<i>Romeo.</i>
Charles Morton Eddy,	B.S. (Mech. E.)	18	<i>Toledo, O.</i>
Hattie Eddy,	B.L.	100	<i>Ann Arbor.</i>
James Burton Eddy,	A.B.	31	<i>Michigan City, Ind.</i>
Jennie Eddy,	Ph.B.	101	<i>Ann Arbor.</i>
Frank Lewis Edinborough,	B.S.		<i>West Bay City.</i>
Jay D. Edmonds,	B.S. (Mech. E.)	2	<i>Taylor, Ill.</i>
Jacob William Eede,	B.S.		<i>Detroit.</i>
Sheridan Williams Ehrman,			<i>Decatur, Ill.</i>
† John Christian Eigenmann,	B.L.		<i>Chicago, Ill.</i>
Fannie Mabel Elliott,	Ph.B.	61	<i>Pontiac.</i>
Thomas John Elliott,			<i>Adrian.</i>
Charles William Ellis,	B.S. (E.E.)	30	<i>Detroit.</i>
Dora Deett Elmer,	A.B.		<i>Mason.</i>
Wright Elsom, Jr.,	B.L.		<i>Ridgeland, Ill.</i>
Ralph Henry Elsworth,	B.S.		<i>Ludington.</i>
Arthur Thomas Emery,			<i>Saginaw, East Side.</i>
Hiram Augustus Emery,	B.S. (E.E.)		<i>West Bay City.</i>
Mary Louisa Engelhard,			<i>Ann Arbor.</i>
Harry Adolph Engman, Jr.,	B.L.	7	<i>Toledo, O.</i>
Edward Brind Escott,			<i>Grand Rapids.</i>
Daisy Florence Evans,	B.L.		<i>Houghton.</i>
Evan Lawrence Evans,	B.L.	23	<i>Corunna.</i>
Harry Oliver Evans,	A.B.		<i>Pittsburg, Pa.</i>
Percy Henriques Evans,	B.S. (E.E.)		<i>Milwaukee, Wis.</i>
Richard Deming Ewing,	B.S. (C.E.)		<i>Grand Rapids.</i>
Herman Henry Eymer,	B.S. (Mech. E.)	80	<i>Saginaw, East Side.</i>
Matilda Louise Fairman,	Ph.B.	9	<i>Chicago, Ill.</i>
Julius C. Feibel,	Ph.B.	60	<i>Hillsboro, O.</i>
Alva Howard Felger,	Ph.B.	31	<i>Geneseo, Ill.</i>
Aristene Noyes Felts,			<i>Fort Wayne, Ind.</i>
Thomas Henry Ferguson,	B.S. (C.E.)	67	<i>Detroit.</i>
Lucien Allen Ferre,			<i>Moweaqua, Ill.</i>
Minnie Anna Ferre,			<i>Moweaqua, Ill.</i>
James Edward Ferris,	Ph.B.	121	<i>Toledo, O.</i>
Dexter Mason Ferry, Jr.,	A.B.		<i>Detroit.</i>
Henry George Field,	B.S.	94	<i>Detroit.</i>

Jane Estelle Field,	A.B.	54	<i>Ann Arbor.</i>
Edward Brush Finch,	B.S. (E.E.)		<i>Owosso.</i>
Rebecca Elizabeth Finch,	A.B.		<i>Ann Arbor.</i>
Richard Fischer, Ph.C.,	B.S. (Chem.)	72	<i>Ann Arbor.</i>
Mary Emily Fish,	B.L.	92	<i>Greenville.</i>
Georgiana Fisher,			<i>Coldwater.</i>
Orleana Amanda Fisher,	B.L.		<i>Chicago, Ill.</i>
Will John Fisher,	B.S. (E.E.)	94	<i>Pontiac.</i>
Ella Virginia Fitch,			<i>Joliet, Ill.</i>
John Watson FitzGerald,	B.S. (Mech.E.)		<i>Grand Rapids.</i>
Frederick Junius Flagg,			<i>St. Thomas, Ont.</i>
Jessie Ellen Flaherty,	B.L.		<i>Detroit.</i>
Katharine Sila Fletcher,	B.S.	23	<i>Lake Linden.</i>
James Harmon Flinn,	B.S. (Mech.E.)		<i>Detroit.</i>
Rudolph Frederic Flintermann,	A.B.	55	<i>Detroit.</i>
Norman Flowers,	Ph.B.		<i>Detroit.</i>
George Edward Foerster,	B.S.		<i>Lansing.</i>
John Foglesong,	A.B.		<i>Burlington, Ind.</i>
Clara Josephine Foley,			<i>Ann Arbor.</i>
Mary Eva Foley,	B.L.	39	<i>Milwaukee, Wis.</i>
Elmer Sherman Follmer,			<i>Grand Rapids.</i>
William Francis Ford,			<i>Salt Lake City, Utah.</i>
Belle Foster,			<i>Howell.</i>
Burt Lewis Foster,	B.S. (Mech.E.)	8	<i>Ann Arbor.</i>
Charles Woodworth Foster,	B.L.	39	<i>Lansing.</i>
Henry Kilgour Foster,			<i>Urbana, O.</i>
Leah Isabel Fowler,	B.L.		<i>St. Johns.</i>
Herbert Wright Fox,	B.S.		<i>Detroit.</i>
James Joe Franc,	Ph.B.	5	<i>Toledo, O.</i>
Hally Frank Frederickson,	A.B.	65	<i>Chicago, Ill.</i>
Edith Lucille Freeman,			<i>Springfield, Ill.</i>
Herbert Ephraim French,	B.S. (C.E.)	60	<i>Reedsburg, Wis.</i>
Ray Spalding Freund,	Ph.B.		<i>Champion.</i>
Henry Arthur Friedman,	Ph.B.	103	<i>Muskegon.</i>
Isaac Kahn Friedman,	Ph.B.	103	<i>Chicago, Ill.</i>
Robert Victor Friedman,	Ph.B.	72	<i>Muskegon.</i>
Walter Carver Fritze,	B.S.	29	<i>Chicago, Ill.</i>
Minnie Frost,	Ph.B.	91	<i>Ann Arbor.</i>
Maude Ethel Fuller,	Ph.B.	9	<i>Charlotte.</i>
Henry Fulton,			<i>Boulder, Col.</i>
Kate Parker Galbraith,			<i>Gardner, Ill.</i>
Stuart Eugene Galbraith,	B.L.		<i>Pontiac.</i>

Mabel Caroline Gale,			<i>Aurora, Ill.</i>
Carolyn Mary Galloo,			<i>Ann Arbor.</i>
Edgar Owen Galloway,	A.B.	27	<i>Hillsdale.</i>
Henry Bennett Gammon,	A.B.	56	<i>Creston, Ill.</i>
Elizabeth Louise Gardiner,	B.L.		<i>Lyons, Ia.</i>
Philip Stimson Gardiner,	B.S. (Mech.E.)	103	<i>Lyons, Ia.</i>
Eugene Horace Garnett,	B.L.	44	<i>Chicago, Ill.</i>
Lena Garrett,			<i>Morenci.</i>
Floyd Agassiz Gastman,	B.S. (Mech.E.)	8	<i>Decatur, Ill.</i>
Abigail Stuart Gaudern,			<i>Pioneer, O.</i>
George Irving Gavett,	B.S. (C.E.)	105	<i>Sandstone.</i>
Augustine Smith Gaylord,			<i>Bay City.</i>
Warren Floramond Geary,			<i>Santa Rosa, Cal.</i>
Conrad Georg,	A.B.	8	<i>Ann Arbor.</i>
Ransom Gardner George,	A.B.	108	<i>Ipsilanti.</i>
Vladimir August Geringer,	Ph.B.	109	<i>Chicago, Ill.</i>
Charles Evans Gernand,			<i>Rossville, Ill.</i>
Jessie Bertha Gibbes,	B.L.	22	<i>Ann Arbor.</i>
Edward Freeman Gibbons,	B.S. (C.E.)		<i>Warren, O.</i>
Ellen Champney Gibson,	A.B.	91	<i>Lincoln, Neb.</i>
Faith Holt Gilbert,	Ph.B.		<i>Detroit.</i>
Mont Gilbert,	B.S. (C.E.)		<i>Gibsonburg, O.</i>
Frank Rust Gilchrist,	B.S. (C.E.)	107	<i>Alpena.</i>
Neil Alexander Gilchrist,			<i>Ishpeming.</i>
Harvey Gould Gilkerson,	B.S. (C.E.)		<i>Valencia, Kan.</i>
Frank Gilman Gilland,			<i>Ann Arbor.</i>
Lida Baldwin Gillet,			<i>Girard.</i>
Charles Robert Gillis,	Ph.B.	24	<i>Ann Arbor.</i>
Gaylord Wilson Gillis,	B.L.		<i>Detroit.</i>
Lina Kate Gjems,	Ph.B.		<i>Willmar, Minn.</i>
James Gundry Glanville,			<i>Lake Linden.</i>
Carrie French Gleason,	Ph.B.		<i>Lansing.</i>
† Dirk Gleysteen, A. B.,			
<i>Hope College,</i>	A.B.	100	<i>Holland.</i>
Henry Newell Goddard,	Ph.B.	95	<i>Ann Arbor.</i>
Nellie E. Goldthwaite,	B.S. (Chem.)	71	<i>Jamestown, N. Y.</i>
Sophia Gomberg,	B.S.		<i>Ann Arbor.</i>
Horatio Stuart Goodell,	B.S. (Mech.E.)		<i>Detroit.</i>
Eleanor Elvira Goodenough,	B.L.		<i>Ludington.</i>
Luman Webster Good-			
enough,	B.S.		<i>Ludington.</i>
Marie Louise Goodman,	Ph.B.	33	<i>Westport, Mo.</i>
Albert Calvin Goodrich,	B.L.		<i>Leavenworth, Kan.</i>

Henrietta Isman Goodrich,	B.L.	64	<i>LaGrange, Ill.</i>
Thomas Edward Goodrich,	B.S. (Bio.)	29	<i>Brutus.</i>
Louis James Goodyear,	Ph.B.	35	<i>Hastings.</i>
William Ward Goodykoontz,	B.L.	27	<i>Boone, Ia.</i>
Ralph Nevin Gorden,	B.L.	3	<i>Abilene, Kan.</i>
Willard Clark Gore,	Ph.B.	64	<i>Chicago, Ill.</i>
Herbert Jay Goulding,	B.S. (Mech.E.)	109	<i>Saginaw, East Side.</i>
Sergius Paul Grace,	B.S. (E.E.)	11	<i>Ann Arbor.</i>
Ralph Krealing Gratigny,	B.S. (Mech.E.)	79	<i>Cincinnati, O.</i>
Frank Pliny Graves,	A.B.	85	<i>Benton Harbor.</i>
Charles Henry Gray,			<i>Chicago, Ill.</i>
Edwin Gray,	A.B.	26	<i>Carthage, Mo.</i>
Humphrey Snell Gray,	A.B.	99	<i>Ludington.</i>
Albert Emerson Greene,	Ph.B.	31	<i>Ann Arbor.</i>
George Frank Greenleaf,	B.L.		<i>Pueblo, Col.</i>
Jessie Scott Gregg,			<i>Ann Arbor.</i>
Oscar Greulich,	B.S. (C.E.)	81	<i>Milwaukee, Wis.</i>
Mary Esther Griest,			<i>Guernsey, Pa.</i>
Willard Wilmer Griffin,	Ph.B.	79	<i>Wenona, Ill.</i>
Edna Ernest Grimes,	Ph.B.	36	<i>Elkhart, Ind.</i>
Leon Murdock Groesbeck,	B.S. (M.E.)	105	<i>Ann Arbor.</i>
Lawrence Chamberlain			
Grosh,	B.S. (Bio.)	19	<i>Toledo, O.</i>
Sam Bates Grubbs,	A.B.	85	<i>Indianapolis, Ind.</i>
Theresa Alvina Grube,	B.L.		<i>Ann Arbor.</i>
Augustus Ernest Guenther,	B.S. (E.E.)	20	<i>Sandusky, O.</i>
Dwight May Guillotte,	B.S. (Mech.E.)		<i>Saginaw.</i>
† Henry Killmaster Gustin,	B.S. (C.E.)	58	<i>Killmaster.</i>
R. Prosper Gustin,	B.S. (E.E.)	66	<i>Ann Arbor.</i>
Harry Lyman Guthrie,	B.L.		<i>Bedford, Ia.</i>
William Joseph Guthrie,	A.B.	51	<i>Bedford, Ia.</i>
George Depue Hadzsits,	A.B.	49	<i>Detroit.</i>
Irma Hadzsits,	B.L.	28	<i>Detroit.</i>
Netta Wilhelmina Haffner,	B.S.	22	<i>Sturgis.</i>
Earl Woodford Hahn,	B.L.	90	<i>Leslie.</i>
Walter Charles Haight,	B.L.		<i>Sycamore, Ill.</i>
Benjamin Franklin Hall, Jr.,	B.L.	92	<i>Lansing.</i>
Ernest Freeman Hall,	A.B.	61	<i>Kalamazoo.</i>
Robert Foote Hall,	A.B.	73	<i>Williamston.</i>
Florence Mabelle Halleck,	Ph.B.	4	<i>Ann Arbor.</i>
Clemence Hamilton,	A.B.	104	<i>Bellevue, O.</i>
James Burt Hamilton,	B.S. (Mech.E.)		<i>Saginaw, East Side.</i>
Paul Hamilton,	B.S. (C.E.)	5	<i>Kingston, Ind.</i>

Walter Monroe Hamilton,	A.B.	67	<i>Bucyrus, O.</i>
Walter John Hammill,	B.L.	114	<i>Rockford, Ill.</i>
John Churchill Hammond,	B.S. (Mech.E.)	70	<i>South Lyon.</i>
Harrie D. Hamper,	B.S. (Mech.E.)	68	<i>Greenville.</i>
Frank Hamsher,	Ph.B.	32	<i>Decatur, Ill.</i>
James Sumner Handy,	A.B.	33	<i>Ann Arbor.</i>
Herbert Osborne Hanford,	B.S. (Mech.E.)	8	<i>Detroit.</i>
Ida Christine Matthes			
Harbeck,	B.L.	8	<i>Detroit.</i>
Helen Leonia Hard,			<i>Detroit.</i>
Frank Fuller Harding,	B.S. (E.E.)		<i>Hudson, Wis.</i>
Joel Alva Harley,			<i>Normal, Ill.</i>
Charles Jacobson Harmon,	B.S. (E.E.)	66	<i>Chicago, Ill.</i>
Emily Augustine Harper,	Ph.B.		<i>Detroit.</i>
Edmund Rice Harrington,	Ph.B.		<i>Port Huron.</i>
George Herbert Harrington,			<i>Titusville, Pa.</i>
Archie Lee Harris,	B.S. (C.E.)		<i>Orange, Mass.</i>
Eula Lovisa Harris,			<i>Jacksonville, Ill.</i>
George Wesley Harris,			<i>Buffalo, N. Y.</i>
Jessie Gertrude Harris,			<i>Fountain City, Ind.</i>
Louise Mather Harris,			<i>Ann Arbor.</i>
Samuel Smith Harris,	A.B.	106	<i>Detroit.</i>
Edwin Brett Hart,	B.L.		<i>Sandusky, O.</i>
Henry Parker Hart,	B.S. (Mech.E.)		<i>Detroit.</i>
Ray Hart,	B.S. (Mech.E.)	67	<i>Midland.</i>
Frances Elvira Hartley,	Ph.B.	30	<i>Baltimore, Md.</i>
Edith Achsah Hartshorn,	B.L.	29	<i>Owosso.</i>
Jennie May Harvey,			<i>Anamosa, Ia.</i>
Hattie Lee Hasty,			<i>Lansing.</i>
Thomas John Hatswell, Jr.,	B.S. (Mech.E.)	8	<i>Saginaw, East Side.</i>
Alex Michael Haubrich,	B.S. (E.E.)	47	<i>Detroit.</i>
Bernice Lena Haug,	B.S.	61	<i>Battle Creek.</i>
Ione Haydon,	B.L.		<i>Decatur.</i>
Clemma Belle Hayes,	A.B.	85	<i>Erie, Pa.</i>
Ralph Waldo Emerson			
Hayes,	Ph.B.	67	<i>Galva, Ill.</i>
George Hayler, Jr.,	B.L.	64	<i>Ann Arbor.</i>
Clarence Wright Hearth,	B.L.	88	<i>Benton Harbor.</i>
William Albert Heartt,	B.S.	21	<i>St. Joseph.</i>
Earl Raye Hedrick,	A.B.		<i>Ann Arbor.</i>
Stella Blanche Hedrick,			<i>Ann Arbor.</i>
Susie Heffernan,	Ph.B.	73	<i>Marquette.</i>
James Heggie,	B.S.		<i>Joliet, Ill.</i>

Meyer L. Heidingsfeld,	Ph.B.	110	<i>Greenfield, O.</i>
Joanna King Hempsted,	B.L.		<i>Detroit.</i>
Margaret Eleanor Hench,	Ph.B.	17	<i>Carlisle, Pa.</i>
Alice May Henderson,	B.S.		<i>Ann Arbor.</i>
Charles Emery Hendrick,	B.S. (Mech.E.)		<i>Ypsilanti.</i>
Grace Asenath Hendrickson,			<i>Ann Arbor.</i>
Etta Herschberger,	B.L.	29	<i>Peoria, Ill.</i>
Frank Hugh Hess,	B.S. (Mech.E.)	50	<i>Ann Arbor.</i>
Bernhard Conrad Hesse,			
Ph.C.,	B.S. (Chem.)	93	<i>Saginaw, East Side.</i>
Lina Hesse,			<i>Saginaw, East Side.</i>
Mary Frances Hibbard,	B.L.	40	<i>Detroit.</i>
Julia Blanche Hickey,	B.L.	11	<i>Lansing.</i>
Turner Paul Hickey,	A.B.	8	<i>Lansing.</i>
Josiah Edwin Hickman,			<i>Benjamin, Utah.</i>
Maude Hicks,	B.L.	52	<i>Ann Arbor.</i>
Ralph Hicks,	B.L.		<i>Dollar Bay.</i>
Winifred Ava Higbee,	A.B.	65	<i>Buchanan.</i>
Leonard Frederick William			
Hildner,	B.S. (Mech.E.)	103	<i>Detroit.</i>
Charles Broas Hill,	A.B.	22	<i>Orleans.</i>
Eliza M. Hill,	B.S.	25	<i>Ann Arbor.</i>
Flora Elsie Hill,			<i>Flint.</i>
Lewis Hill,	B.L.	119	<i>Ottawa, Ill.</i>
Ford Archer Hinchman,	B.S. (Mech.E.)	10	<i>Detroit.</i>
Edwin Smith Hinckley,			<i>Fillmore, Utah.</i>
Bertha Katharine Hine,	Ph.B.	26	<i>Bay City.</i>
Mathilde Hine,	Ph.B.	26	<i>Bay City.</i>
Emma Mary Hinkley,			<i>Orchard Lake.</i>
Mildred Turner Hinsdale,	A.B.	18	<i>Ann Arbor.</i>
John Seldon Hoadley,	B.S. (C.E.)	19	<i>Edon, O.</i>
Herman Franklin Hoch,	B.S.	27	<i>Mendon.</i>
George Aloysius Hofstetter,			<i>St. Louis.</i>
Edna Maria Holbrook,	B.L.		<i>Ann Arbor.</i>
Nina May Holden,	A.B.	25	<i>Michigan City, Ind.</i>
Edward Morton Holland,	A.B.		<i>Detroit.</i>
James Steedman Holland,	A.B.	103	<i>St. Louis, Mo.</i>
Julia Anna Holland,			<i>Ann Arbor.</i>
Thomas Bond Holland,	A.B.	103	<i>St. Louis, Mo.</i>
Arthur Harold Holmes,	B.L.	122	<i>Ann Arbor.</i>
Florence May Holmes,	B.L.		<i>Coldwater.</i>
Henry Worth Holmes,			<i>Ann Arbor.</i>
Joseph Sabine Hurbert			
Holmes,	B.S. (Mech.E.)	109	<i>Grand Ledge.</i>

Mabel Edith Holmes,	Ph.B.	62	<i>Saginaw, East Side.</i>
Nathaniel Leeson Holmes,	B.S. (E.E.)	38	<i>Coldwater.</i>
Charles Mead Holt,			<i>West Epping, N. H.</i>
Kathrene Holzapfel,			<i>Hagerstown, Md.</i>
Alfred William Hookway,	B.S. (E.E.)	95	<i>Grass Lake.</i>
Bessie Lee Hopkins,	Ph.B.		<i>Lansing.</i>
Kate Almira Hopper,	B.L.	68	<i>Detroit.</i>
Jesse Burroughs Hornung,	A.B.	88	<i>Ann Arbor.</i>
Bryson Dexter Horton,	B.L.	31	<i>Fenton.</i>
Isabelle Hosie,	Ph.B.		<i>Wayne.</i>
Arthur Miller Hovey,	B.L.	2	<i>Tacoma, Wash.</i>
Sarah May Howard,	Ph.B.	64	<i>Chicago, Ill.</i>
Hiram Howden,	B.S. (Mech.E.)	76	<i>Silver Springs, N. Y.</i>
Frank William Howe,	A.B.	86	<i>Ann Arbor.</i>
Minnie Pearl Howell,	Ph.B.	29	<i>Flint.</i>
Phil Garry Hower, Ph.C.,			<i>Sandusky, O.</i>
Hobart Birney Hoyt,	A.B.	8	<i>Grand Rapids.</i>
Arthur Lucius Hubbard,	A.B.	68	<i>South Bend, Ind.</i>
Clarence William Hubbell,	B.S. (C.E.)	89	<i>Manistee.</i>
Philip Sawyer Hudson,			<i>Ann Arbor.</i>
Ettie Louise Hulbert,	Ph.B.	65	<i>Chicago, Ill.</i>
Bertha Hull,			<i>Carbondale, Ill.</i>
Gertrude Hull,	A.B.	61	<i>Carbondale, Ill.</i>
Melburn Walter Hull,	B.S. (Mech.E.)	114	<i>Saline.</i>
John Hulst,	B.S. (Mech.E.)		<i>Grand Rapids.</i>
Jennie Agnes Humphrey,	B.L.		<i>Lansing.</i>
Alfred Hatch Hunt,	A.B.	57	<i>Grand Rapids.</i>
Grace Pauline Hunt,	Ph.B.		<i>St. Johns.</i>
Timothy Dwight Hunt, Jr.,	A.B.	85	<i>Marshall.</i>
Milton Byron Huntton,	B.S. (E.E.)	31	<i>Waterford.</i>
Lous Gorham Hupp,	B.S. (Mech.E.)	32	<i>Detroit.</i>
John Stanley Hurd,	A.B.	102	<i>Detroit.</i>
W. Wallace Hurd,	Ph.B.	56	<i>Clio.</i>
Willard Hunter Hutchings,	B.S.	20	<i>Leslie.</i>
Marion Tower Hyatt,	B.L.	10	<i>Flint.</i>
Josephine Jewett Hyde,	Ph.B.	32	<i>Ann Arbor.</i>
William Lewis Ikenberry,	B.S.,	16	<i>Waterloo, Ia.</i>
George Ingersoll, Jr.,	Ph.B.	56	<i>Marshall.</i>
Elizabeth Irland,	Ph.B.		<i>Ann Arbor.</i>
Helen Amelia Irland,	Ph.B.		<i>Ann Arbor.</i>
Frederick Charles Irwin,	B.L.	33	<i>Grass Lake.</i>
John Irwin,	B.S. (C.E.)		<i>Mt. Clemens.</i>
Valentine Seaman Ives,	B.S. (C.E.)	95	<i>Detroit.</i>

Thomas Burrowes Jack,	Ph.B.	22	<i>Decatur, Ill.</i>
Ray Philip Jackson,	B.S. (E.E.)	8	<i>Mayfield.</i>
Eliza Smith James,			<i>Benton Harbor.</i>
Lois Harriet Janes,	Ph.B.	35	<i>Ann Arbor.</i>
Frederic E. Janette,	B.L.	86	<i>Owosso.</i>
James Jenkins,	B.L.		<i>Oshkosh, Wis.</i>
George Darwin Jennings,	B.L.		<i>Tonica, Ill.</i>
Herbert Spencer Jennings,	B.S. (Bio.)	98	<i>Tonica, Ill.</i>
Ogden Jewell,	A.B.	3	<i>Detroit.</i>
Benjamin Kingsley Joel,	B.L.	8	<i>Fort Smith, Ark.</i>
Allie Erastus Johnson,	B.S. (C.E.)		<i>Watrousville.</i>
Harry Fayette Johnson,	B.S. (C.E.)	61	<i>Ludington.</i>
Lucy Johnson,	Ph.B.	94	<i>Mendota, Ill.</i>
Clarence Thomas Johnston,	B.S. (C.E.)	29	<i>Cheyenne, Wyo.</i>
John Black Johnston,	Ph.B.	107	<i>Belle Centre, O.</i>
Lynn Myrton Johnston,	B.L.	24	<i>Romeo.</i>
Carroll Dunham Jones,	B.S. (E.E.)	103	<i>Ann Arbor.</i>
Edith Clemence Jones,	B.L.	20	<i>Ann Arbor.</i>
Estelle Loraine Jones,	A.B.	31	<i>Parkville.</i>
Florence Rachael Jones,	B.L.		<i>Ann Arbor.</i>
Frances Annette Jones,			<i>Owosso.</i>
Robert Emmons Jones,	A.B.	29	<i>Webster City, Ia.</i>
George Thayer Jordan,	A.B.		<i>North Adams.</i>
Belle Joslyn,			<i>Romeo.</i>
Benjamin Franklin Kastl,	B.S. (E.E.)	53	<i>Detroit.</i>
Taka Kawada,	Ph.B.	51	<i>Tokio, Japan.</i>
George Cady Keech,	B.S. (E.E.)	31	<i>Centreville.</i>
Abner Hart Kceeler,			<i>Ridgefield, Conn.</i>
Fred Lockwood Keeler,	B.S. (C.E.)	88	<i>Grass Lake.</i>
Jessie Keith,			<i>Edwardsport, Ind.</i>
Frank Herman Keller,	B.S. (Chem.)		<i>Indianapolis, Ind.</i>
Edwin Howard Kelley,	B.L.	40	<i>Cadillac.</i>
Helen Adeline Kelley,	Ph.B.	8	<i>Cadillac.</i>
Henry Ralph Kellogg,	B.L.	39	<i>Jackson.</i>
Hugh Braley Kelly,	B.S. (C.E.)	19	<i>Elgin, Ill.</i>
Mary Eleanor Kelly,	Ph.B.	38	<i>Chicago, Ill.</i>
Nell Kempf,	Ph.B.	27	<i>Ann Arbor.</i>
Arthur Jay Kendall, LL.M.,	B.S.	37	<i>Ann Arbor.</i>
Charles Dean Kennedy,			<i>Marion, Ia.</i>
Georgietta Kennedy,	Ph.B.	49	<i>Hastings.</i>
Lelia Ione Kennedy,	Ph.B.		<i>Kalamazoo.</i>
William Reybold Kennedy,	A.B.	30	<i>St. Louis.</i>
Agnes Monica Kenny,	B.L.		<i>Manistee.</i>

Fred Charles Kent,	B.S.	65	<i>Ann Arbor.</i>
Walter James Kent,	B.S.	66	<i>Ann Arbor.</i>
Wallace Kerr,	Ph.B.		<i>La Porte, Ind.</i>
George Foster Key,	B.S. (C.E.)	85	<i>Ann Arbor.</i>
Thomas Michael Kilbride,	Ph.B.	107	<i>Havana, Ill.</i>
Edith May Kimball,	Ph.B.	1	<i>Ann Arbor.</i>
William Davis Kimball,	B.S. (Mech.E.)	21	<i>Ann Arbor.</i>
Byron Claudius Kimes,	A.B.	35	<i>Ypsilanti.</i>
Julia Kimlin,	B.S.	28	<i>Quincy, Ill.</i>
Edmund Cockburn Kindersley,			<i>Exeter, England.</i>
Harry Rufus King,	B.S. (E.E.)	61	<i>Adrian.</i>
Helen Beecher King,	Ph.B.	67	<i>Flint.</i>
Horace Williams King,	B.S. (C.E.)	30	<i>Big Rapids.</i>
Oscar Lincoln King,	A.B.		<i>Clement.</i>
Carrie Emma Kirtland,	Ph.B.	67	<i>Ann Arbor.</i>
Florence Kirtland,			<i>Minneapolis, Minn.</i>
Emma Clara Klais,	B.L.		<i>Ann Arbor.</i>
Wilson Klingler,			<i>Manhattan, Ill.</i>
Mark Stevens Knapp,	B.L.	38	<i>Fenton.</i>
Theresa Knauf, M.D.,			<i>Jackson.</i>
Grace Knight,			<i>Utica.</i>
Harry Valentine Knight,	B.S. (E.E.)	28	<i>Alpena.</i>
George Edward Kollen,	A.B.	112	<i>Holland.</i>
John Albert Kreis,	B.S. (Mech.E.)		<i>Cincinnati, O.</i>
Barend Herman Kroeze,	A.B.	65	<i>Grand Rapids.</i>
Herman Bertram Krogman,	B.L.	69	<i>Saginaw.</i>
Cecilia Wanda Kueffner,			<i>Belleville, Ill.</i>
Franz Christian Kuhn,	B.S.	102	<i>Mt. Clemens.</i>
Adoniram Judson Ladd,	A.B.	75	<i>Ann Arbor.</i>
Inez M. Ladd,			<i>Brooklyn.</i>
Lewis Frank Ladd,			<i>Brooklyn.</i>
Harriet Lake,			<i>Independence, Ia.</i>
Guy Lamont,	B.S. (Mech. E.)		<i>Bay City.</i>
Matthew Lamont,	B.S. (C.E.)		<i>Detroit.</i>
Clarence Haskell Lander,	B.S. (Bio.)	25	<i>Rockford, Ill.</i>
Kate Alene Landfair,			<i>Leslie.</i>
Herbert Williams Landon,			<i>Denver, Col.</i>
Fanny Elizabeth Langdon,	B.S.	34	<i>Plymouth, N. H.</i>
Stephen Langdon,	B.L.		<i>Ida.</i>
Carl Fred Lange,	A.B.	51	<i>Saginaw.</i>
Alice Maud Lapham,	A.B.	49	<i>Staunton, Va.</i>
Eugene LaRowe,	A.B.	8	<i>Webberville.</i>
Kirke Lathrop,	B.L.		<i>Detroit.</i>

Rufus Gillett Lathrop,	A.B.	97	<i>Detroit.</i>
Lou Ella LaTourette,	Ph.B.	62	<i>Fenton.</i>
John Edward Lautner,			<i>Traverse City.</i>
George King Lawton,	A.B.	32	<i>Jackson.</i>
Swaby Latham Lawton,	B.L.		<i>Lawton.</i>
Mary Frances Leach,			<i>Detroit.</i>
Thomas Bassnett Lee,	B.L.	14	<i>Coldwater.</i>
David Le Favour,	B.S. (C.E.)	37	<i>Bay City.</i>
Thad Emory Leland,			<i>Emery.</i>
Heman Burr Leonard,	B.S. (E.E.)	47	<i>Detroit.</i>
Clare James Le Roy,	Ph.B.		<i>Saginaw, East Side.</i>
Bertha Amelia Lewis,	Ph.B.	13	<i>Jackson.</i>
John Gurdon Lewis,	B.S.		<i>Oak Park, Ill.</i>
John Sedgwick Lewis, Jr.,	B.S. (E.E.)	21	<i>Jonesville.</i>
Mary Catherine Lewis,	A.B.	35	<i>Chicago, Ill.</i>
Susan Whipple Lewis,	A.B.	35	<i>Chicago, Ill.</i>
Warren Harmon Lewis,	B.S. (Mech.E.)	51	<i>Oak Park, Ill.</i>
William Adams Lewis,	B.S.		<i>Rockford, Ill.</i>
Max Lichtenstein,	B.S. (C.E.)	67	<i>Chicago, Ill.</i>
Herman Adolph Liebig,	A.B.	13	<i>Ann Arbor.</i>
Frank Waterman Lightner,	Ph.B.	91	<i>Detroit.</i>
Erasmus Christopher Lindley,	B.L.	29	<i>Detroit.</i>
Jennie Littlefield,	B.L.	25	<i>Sturgis.</i>
Fanny Talbot Locher,			<i>Decatur, Ill.</i>
Jacob William Loeb,	Ph.B.	111	<i>Chicago, Ill.</i>
Linley Grant Long,	A.B.	51	<i>Quaker City, O.</i>
Jacob Lingard Lorie,	B.L.	36	<i>Kansas City, Mo</i>
Percy Searle Lorie,	B.S. (E.E.)	6	<i>Kansas City, Mo</i>
Frank Lemoine Loring, Jr.,			<i>Windsor, Ont.</i>
Medor Ewing Louisell,	B.L.	26	<i>Ann Arbor.</i>
Henry Harrison Lovell,	B.S. (E.E.)	24	<i>Flint.</i>
Arthur Lussky,			<i>Chicago, Ill.</i>
Daniel Benjamin Luten,	B.S. (C.E.)	63	<i>Grand Rapids</i>
Anna Mae Lutz, M.S., <i>Purdue University,</i>	B.S. (Bio.)	105	<i>La Fayette, Ind,</i>
Eugene Percy Lyle,	B.L.		<i>Kansas City, Mo.</i>
Richard Roswell Lyman,	B.S. (C.E.)	30	<i>Tooele, Utah.</i>
Alva Eden Lyon,	B.S. (C.E.)	49	<i>Ann Arbor</i>
Elmer Daniel Lyon,	B.S. (Mech.E.)		<i>Dexter.</i>
Walter Farrand Lyon,	B.S. (Chem.)		<i>Detroit.</i>
Daniel Franklin Lyons,	B.L.	77	<i>Fenton.</i>
Henry Lawrence LeHunte Lyster,	A.B.		<i>Detroit.</i>

William Briggs MacHarg, B.S. (Mech.E.)		<i>Chicago, Ill.</i>
William Arthur MacGugan, M.D.,		<i>Toronto, Ont.</i>
Lestra Kinney MacMillan,		<i>Xenia, O.</i>
Charles Chase MacPherran, B.S. (Mech.E.)	37	<i>Sterling, Ill.</i>
Samuel Denis Magers,		<i>Houston, Tex.</i>
Eva Idel Mains, Ph.B.	111	<i>Ann Arbor.</i>
Nellie Josephine Malarkey, B.L.	26	<i>Oregon, Ill.</i>
William Sherman Mallernee,		<i>Clyde, O.</i>
James Halsey Mallory, Jr., A.B.	32	<i>Detroit.</i>
Robert Woolf Manly, B.L.	40	<i>Chillicothe, O.</i>
Hans Mannhardt, B.S. (Chem.)		<i>Chicago, Ill.</i>
Frank Addison Manny, A.B.	89	<i>Michigan City, Ind.</i>
Herman Cornelius Markham,		<i>Ann Arbor.</i>
Carl Richard Marquardt, B.S. (Mech.E.)	3	<i>Mt. Clemens.</i>
Alfred Cookman Marshall, B.S. (E.E.)	93	<i>Detroit.</i>
George Arthur Marston, B.L.		<i>Bay City.</i>
LeClaire Martin,		<i>Panora, Ia.</i>
Walter Park Martindale, Ph.B.	52	<i>Fulton, Ill.</i>
Clyde Shelton Mason, B.S. (Mech.E.)	8	<i>Owosso.</i>
Edward Luther Mason, Ph.B.	88	<i>Owosso.</i>
Harry McCrea Mason, B.S. (Mech.E.)	12	<i>Detroit.</i>
Edward Guy Matter, B.S. (E.E.)	42	<i>Grand Rapids.</i>
Edward Gottlieb Maul, B.S.	108	<i>Ann Arbor.</i>
David Porter Mayhew, Ph.B.	111	<i>Detroit.</i>
Emma Gennette McAllaster, B.L.	35	<i>Ann Arbor.</i>
Harry Stevenson McAlvay, Ph.B.	8	<i>Manistee.</i>
Charles Hamilton McBride, Ph.B.		<i>Holland.</i>
Edward Granger McBride, A.B.		<i>Grand Rapids.</i>
Susanne Onins McCauley, Ph.B.		<i>Ann Arbor.</i>
Harry Ernest McClumpha, B.S. (M.E.)	63	<i>Plymouth.</i>
Thyrza McClure, Ph.B.	36	<i>Minneapolis, Minn.</i>
Thomas Durand McColl, B.S. (E.E.)	26	<i>Jackson.</i>
Sarah Elizabeth Voorheis McComb,		<i>Grand Rapids.</i>
Amanda McCombs,		<i>South Bend, Ind.</i>
†Henry Arnaud McCornick,		<i>Salt Lake City, Utah.</i>
Archibald McAllister McCracken, A.B.	96	<i>Birmingham.</i>
Thomas Francis McCrickett, B.S. (Mech.E.)	16	<i>Bay City.</i>
Emily Mabel McCune, A.B.		<i>Detroit.</i>
Ernest Boone McDonald,		<i>Mt. Pleasant, Ia.</i>
Pearl McDonald, Ph.		<i>Ann Arbor.</i>

Hugh Farber McGaughey,	B.S.	96	<i>Winona, Minn.</i>
Louise Algae McGilvray,	Ph.B.	6	<i>Ann Arbor.</i>
Archie Rowse McGregor,	B.S. (E.E.)		<i>Canton, O.</i>
Margarèt McGregor,	Ph.B.		<i>Bay City.</i>
Jessie Maud McIntyre,	Ph.B.	60	<i>Knoxville, Tenn.</i>
Leonora McKay,			<i>Plainwell.</i>
William Dexter McKenzie,	A.B.		<i>Ann Arbor.</i>
William Henry McLauchlan,	Ph.B.	104	<i>Chicago, Ill.</i>
Lois Azubah McMahon,	Ph.B.		<i>Ypsilanti.</i>
Emma Josephine McMorran,	Ph.B.		<i>Port Huron.</i>
George Karr McMullen,	B.S. (Mech.E.)		<i>Grand Rapids.</i>
Clara May McOmber,	Ph.B.	31	<i>Ann Arbor.</i>
Isabella McRae,	Ph.B.	91	<i>Alpena.</i>
Elijah Wood Meddaugh, Jr.,	A.B.		<i>Detroit.</i>
Margaret Evelyn Meikle,			<i>Lancaster, O.</i>
William Julius Melchers,	B.S. (E.E.)	50	<i>Saginaw, East Side.</i>
Bessie Wilhelmina Merrell,	B.L.		<i>Detroit.</i>
Herbert Woodruff Merrill,	B.S. (Mech.E.)	8	<i>Saginaw, East Side.</i>
Joseph Francis Merrill,	B.S.	97	<i>Richmond, Utah.</i>
Maud Elizabeth Merritt,	B.L.	100	<i>Battle Creek.</i>
William Guest Merritt,			<i>Battle Creek.</i>
David Franklin Mertz,	Ph.B.		<i>Burnett's Creek, Ind.</i>
William Maurice Mertz,	Ph.B.		<i>Burnett's Creek, Ind.</i>
Edna Mettler,			<i>Creston, Ill.</i>
James Albert Millar,	B.S. (Mech.E.)	3	<i>Cady.</i>
Grace Grieve Millard,	Ph.B.	18	<i>Adrian.</i>
Dwight Otis Miller,	B.L.	58	<i>Greenfield, O.</i>
Frank Edgar Miller,	B.S. (E.E.)		<i>Port Huron.</i>
George Henry Miller,	B.S. (E.E.)	100	<i>Marshall.</i>
Harriet Miller,			<i>Marshalltown, Ia.</i>
John Ezra Miller,	A.B.	77	<i>Milledgeville, Ill.</i>
Joseph Leggett Miller,	B.S.	100	<i>Kewanee, Ill.</i>
Lena Miller,			<i>Ann Arbor.</i>
Stella Maud Miller,			<i>Roxbury, Mass.</i>
William Smith Miller,	B.S.	98	<i>Rockford, Ill.</i>
Lennette Gertrude Milliman,	Ph.B.	63	<i>Lakeville, N. Y.</i>
Albert Beekman Mills,	B.S. (Bio.)		<i>Port Huron.</i>
Harry DeYoe Mills,	B.S. (C.E.)	24	<i>Kalamazoo.</i>
Charles Augustine Miner,			<i>Coldwater.</i>
Nagamasa Minoda,			<i>Tokio, Japan.</i>
Joseph W. Mitchell,	B.L.		<i>Beacon.</i>
Myron Wilfred Mitchell,			<i>Chloride, N.</i>
Georgien Emma Mogford,	Ph.B.	30	<i>Jackson.</i>

Cascie Rich Montague,	B.L.	25	<i>Traverse City.</i>
Charles Hubert Mooney,			<i>Lake Odessa.</i>
Elizabeth Wilson Moore,			<i>Battle Creek.</i>
Henry Evans Moore,	B.S. (C.E.)	25	<i>Saginaw, East Side.</i>
Wendell Phillips Moore,			<i>Ann Arbor.</i>
Julia Louise Morey,	Ph.B.	43	<i>La Grange, Ill.</i>
Frederic George Morhous,			<i>Detroit.</i>
William Horace Morley,	Ph.B.	31	<i>Marine City.</i>
Charles Hosmer Morse, Jr.,	B.S. (Mech.E.)	49	<i>Chicago, Ill.</i>
Hazen Hooker Morse,			<i>Grand Rapids.</i>
Edgar Martin Morsman, Jr.,	Ph.B.	95	<i>Omaha, Neb.</i>
Joseph Jenry Morsman,	B.S. (C.E.)	100	<i>Omaha, Neb.</i>
Frank Vandell Moseley,	B.S.	45	<i>Kansas City, Mo.</i>
Edith Irene Moser,	Ph.B.	113	<i>Charlotte.</i>
Julius Moses,	Ph.B.	98	<i>Chicago, Ill.</i>
Frank Eliot Mulder,			<i>Laingsburg,</i>
John Edward Mullin,			<i>Smethport, Pa.</i>
Ida May Muma,	A.B.	106	<i>Ann Arbor.</i>
Samuel Stephen Mummery,	B.S.	3	<i>Ann Arbor.</i>
Mary Florence Munro,			<i>Detroit.</i>
Earle Munson,	B.S. (E.E.)	10	<i>Fort Thomas, Ky.</i>
James Orin Murfin,	B.S. (E.E.)	27	<i>Ann Arbor.</i>
Victor Alphonso George Murrell,			<i>Belleville, Ont.</i>
Marion Holmes Nash,			<i>Ridgefield, Conn.</i>
Wilhametta Orton Nash,			<i>South Norwalk, Conn.</i>
Miron Williams Neal,	A.B.	32	<i>Ann Arbor.</i>
Helen Nelles,	Ph.B.	41	<i>Bay City.</i>
Joseph Raleigh Nelson,	B.S.	48	<i>Ann Arbor.</i>
Mary Wright Nettleton,			<i>Washington, Conn.</i>
Orpha Adelia Neuman,			<i>Fenton.</i>
Johanna Kunigunda Neumann,	B.L.		<i>Ann Arbor.</i>
William Fredrick Valen- tine Neumann,	B.S. (E.E.)	50	<i>Ann Arbor.</i>
Cyrenius Adelbert Newcomb,	B.S.	87	<i>Detroit.</i>
William Wilmon Newcomb,	B.S. (Bio.)	72	<i>Detroit.</i>
Bessie Adele Newton,	B.L.		<i>Oakdale Park.</i>
Frederick Whittlesey New- ton,	A.B.	63	<i>Saginaw.</i>
Guy Dorick Newton,	B.S. (Mech.E.)		<i>Ann Arbor.</i>
Maidie Newton,	Ph.B.		<i>Maple Rapids.</i>

Ralph Winthrop Newton,	B.S. (C.E.)	64	<i>Ann Arbor.</i>
Harry Gilbert Nichols,	B.L.		<i>Corunna.</i>
John Francis Nichols,	B.S. (Mech.E.)	38	<i>Bay City.</i>
Harry Glover Nicol,	B.S. (Mech.E.)		<i>Detroit.</i>
Harry Thomas Nightingale,	Ph.B.	22	<i>Chicago, Ill.</i>
Charlotte Genevieve Noble,	B.S.	44	<i>Rice Lake, Wis.</i>
Frederick Charles Noble,	B.S. (C.E.)	75	<i>Chicago, Ill.</i>
Jane Frances Noble,	Ph.B.	33	<i>Rice Lake, Wis.</i>
Ruth Amelia Noble,	A.B.	75	<i>Rice Lake, Wis.</i>
Carolyn Weed Norton,			<i>Ypsilanti.</i>
Edward Gooding Norton,	B.S. (Mech.E.)		<i>Lockport, Ill.</i>
Luthera B. Nowlen,	B.L.	11	<i>Monroe.</i>
Harry Davidson Nutt,	A.B.	1	<i>Hancock, N. Y.</i>
Louise Marie Obenauer,	A.B.	95	<i>Manistee.</i>
Arthur Patrick O'Brien,	B.S. (C.E.)		<i>Chicago, Ill.</i>
Sara Genevieve O'Brien,	B.L.	62	<i>Ann Arbor.</i>
Walter Howard O'Brien,	B.S. (E.E.)		<i>Chicago, Ill.</i>
Ignatius Joseph Ohman,			<i>Eureka, Cal.</i>
Lauretta May O'Meara,	B.L.		<i>Marquette.</i>
Edith May Orr,	B.L.	112	<i>Manistique.</i>
Martha Elisabeth Orr,	B.L.	30	<i>Ann Arbor.</i>
Almerene M. Orsborn,	B.L.		<i>Eaton Rapids.</i>
Jesse Francis Orton,	A.B.	78	<i>Ann Arbor.</i>
Frederick Arthur Osborn,	Ph.B.	35	<i>Saginaw, East Side.</i>
Samuel Osborn,	B.S. (Chem.)	100	<i>Manchester.</i>
Frederic Leigh Osenburg,	B.L.	52	<i>Ann Arbor.</i>
Henry Bailey Otis,	B.S. (E.E.)	3	<i>Chicago, Ill.</i>
Elmer James Ottaway,	B.L.	79	<i>Ann Arbor.</i>
James Bertram Overton,	B.S.	67	<i>Detroit.</i>
Martha Drake Owen,	A.B.	57	<i>De Land, Fla.</i>
Mabel Oxnard,	A.B.	12	<i>Detroit.</i>
William Henry Padley,	B.L.	29	<i>Pinckney.</i>
Charles Gilbert Palmer,	B.S. (E.E.)	22	<i>Detroit.</i>
Robert Kendrick Palmer,	B.S. (C.E.)	63	<i>Geneva, N. Y.</i>
Emma Grace Palmerlee,	Ph.B.		<i>Romeo.</i>
Edwin Reuben Parker,	B.L.		<i>Ann Arbor.</i>
James Willis Parker,	A.B.	33	<i>Grand Blanc.</i>
Lizzie Kennedy Parker,	B.L.		<i>Essexville.</i>
Marian Sara Parker,	B.S. (C.E.)		<i>Detroit.</i>
Marietta Parker,	Ph.B.	105	<i>Ann Arbor.</i>
Nella Parker,	Ph.B.	63	<i>Ann Arbor.</i>
Phebe Parker,	A.B.	21	<i>Norwalk, O.</i>
Charles Herbert Parkes,	B.S. (Chem.)	13	<i>Chicago, Ill.</i>

Luna Pearle Parkhurst,	Ph.B.	69	<i>Middleville.</i>
Lewis Merton Parrott,	B.S. (Mech.E.)	7	<i>Mt. Clemens.</i>
William Collins Parsal,	Ph.B.	60	<i>Benton Harbor.</i>
Carl Copeland Parsons,	A.B.		<i>Saginaw.</i>
Harry Hemphill Parsons,			<i>Sedalia, Mo.</i>
Maude Parsons,	A.B.	87	<i>Saginaw.</i>
Albert Andrew Passolt,	B.S. (E.E.)	41	<i>Saginaw, East Side.</i>
Alice Isabella Paterson,	A.B.		<i>Albany, N. Y.</i>
Alice Cary Patten,	Ph.B.	13	<i>De Kalb, Ill.</i>
Marion Patton,	A.B.	58	<i>Olympia, Wash.</i>
William Fulton Patterson,	B.S.		<i>Holly.</i>
Gorden Bennett Paxton,	B.S. (C.E.)	7	<i>St. Joseph.</i>
Abigail Pearce,	Ph.B.		<i>Ypsilanti.</i>
Alvick Alfonso Pearson,	Ph.B.	48	<i>Troy, O.</i>
Ellen Mary Pease,			<i>Malone, N. Y.</i>
George Wilcox Peavy,	B.L.	65	<i>Howell.</i>
Ada Allene Peck,	Ph.B.	19	<i>Cassopolis.</i>
Herbert Edmund Peckham,	A.B.	69	<i>Providence, R. I.</i>
Bessie Chase Peek,			<i>Oregon, Ill.</i>
Alice Peirce,	A.B.	27	<i>Chicago, Ill.</i>
Maud Bell Pendell,	B.L.	30	<i>Saginaw.</i>
Carrie Eleanor Penfield,			<i>Battle Creek.</i>
Frank Clifford Penoyar,	B.L.		<i>Au Sable.</i>
William Hale Perkins,	B.L.	27	<i>Grand Rapids.</i>
Clarence Herbert Perry,	B.S. (C.E.)	27	<i>Peabody, Kan.</i>
Ida Perry,	A.B.	24	<i>Muskegon.</i>
Stuart Hoffman Perry,	A.B.	70	<i>Pontiac.</i>
Earle Clifford Peters,	Ph.B.	99	<i>Columbus, O.</i>
Frank Henry Petrie,	A.B.		<i>Muskegon.</i>
Jessie Phelps,	B.S.	62	<i>Pontiac.</i>
Carlin Philips,	B.S.	30	<i>Kenton, O.</i>
Eva Régine Phillips,	Ph.B.	38	<i>Kewanee, Ill.</i>
Charlotte Elizabeth Pickett,	B.S.		<i>Ann Arbor.</i>
Julian Irving Pierce,			<i>Elva.</i>
Warren Pierpont,	B.L.	55	<i>Owosso.</i>
Adrian John Pieters,	B.S. (Bio.)	72	<i>Ann Arbor.</i>
Frank Woodworth Pine,	A.B.	45	<i>Detroit.</i>
Lettie Jenette Poe,			<i>Ashland, O.</i>
Lewellyn Sherrill Pomeroy,	B.S. (C.E.)	100	<i>Kalamazoo.</i>
Carlotta Emma Pope,	Ph.B.	30	<i>Allegan.</i>
Florence Harriett Pope,	Ph.B.	99	<i>Allegan.</i>
Byron Cleaveland Porter,	Ph.B.	78	<i>Oak Park, Ill.</i>
Henry Hulbert Porter,	A.B.	53	<i>Unionville, Conn.</i>

John Hossack Porter,	B.L.	8	<i>Ottawa, Ill.</i>
Melvin Park Porter,	A.B.	93	<i>West Sunbury, Pa.</i>
Minott Eugene Porter,	B.S. (C.E.)	91	<i>West Richfield, O.</i>
Ross Porter,			<i>West Sunbury, Pa.</i>
Myra McPherson Post,	B.L.	32	<i>Detroit.</i>
Emma Caroline Potter,	Ph.B.		<i>Hiawatha, Kan.</i>
Jane Bliss Potter,	A.B.	99	<i>Minneapolis, Minn.</i>
Alice Maude Pound,	Ph.B.		<i>Pontiac.</i>
William Gilbert Povey,	B.L.		<i>Detroit.</i>
Mary Fairman Power,	Ph.B.	107	<i>Detroit.</i>
Anthony Pratt,	A.B.	32	<i>Ann Arbor.</i>
Bertha Chloe Pratt,			<i>Chagrin Falls, O.</i>
John Sherring Pratt,			<i>Toledo, O.</i>
Louis Albert Pratt,	B.L.		<i>Traverse City.</i>
Almira Ann Prentice,	A.B.	63	<i>Kalamazoo.</i>
James Hendry Prentiss,	B.L.	3	<i>Canon City, Col.</i>
Edward Kellum Preston,	B.S. (Mech.E.)		<i>Grass Lake.</i>
Nina Kate Preston,			<i>Ionia.</i>
Norman Wellington Price,			<i>Newburgh, Ont.</i>
Mary Rosetta Pugh,	B.L.		<i>Lansing.</i>
Katharine Elizabeth Puncheon,	B.L.		<i>Philadelphia, Pa.</i>
Nancy Edith Purdum,			<i>Chillicothe, O.</i>
Andrew Johnson Purdy,			
Ph.B., <i>Alfred Univ.,</i>	Ph.B.		<i>Buffalo, N. Y.</i>
Clare Taylor Purdy,	B.L.		<i>Caro.</i>
May Henrietta Purmort,	A.B.	22	<i>Saginaw.</i>
Richard Rider Putnam,	A.B.	58	<i>Kalamazoo.</i>
Willard R. Pyle,			<i>Willowdale, Pa.</i>
Joseph Henry Quarles,	Ph.B.	3	<i>Milwaukee, Wis.</i>
Flora Maude Quigley,			<i>Ann Arbor.</i>
Lilian May Quigley,			<i>Ann Arbor.</i>
Samuel T. Quigley,	Ph.B.	22	<i>Richwood, O.</i>
Richard Quinn,	B.S. (C.E.)	68	<i>Chicago, Ill.</i>
Dan Lace Quirk, Jr.,	Ph.B.	89	<i>Ypsilanti.</i>
James Merton Raikes,	B.S. (C.E.)	*	<i>Burlington, Ia.</i>
Harrison McAllester Randall,	Ph.B.	95	<i>Ann Arbor.</i>
Helen Lucia Randall,	Ph.B.	32	<i>Coldwater.</i>
Lida Eleanor Randall,			<i>Huntley, Ill.</i>
Mary Deborah Raper,	B.L.	8	<i>Detroit.</i>
†John Jay Ratcliffe,	B.S.	45	<i>Waukon, Ia.</i>
Howard Monroe Raymond,	B.S. (Mech.E.)	88	<i>Grass Lake.</i>

Carrie Estella Read,			<i>Ann Arbor.</i>
Ida Belle Rector,	B.L.		<i>Tecumseh.</i>
Leonard Le Roy Rediek,	A.B.		<i>Mansfield, O.</i>
James Calvin Reed,			<i>Tuscola, Ill.</i>
Henry Reek,			<i>Batcheller.</i>
Henry Frederick Lewis			
Reiehle,	A.B.	92	<i>Saginaw, East Side.</i>
Edward Snover Reid,	B.S. (Meeh.E.)	99	<i>Vassar.</i>
Cora Frances Reilly,	B.L.	33	<i>Chicago, Ill.</i>
Royal Clark Remick,	B.S. (Meeh.E.)	19	<i>Detroit.</i>
Frank Bernard Reynolds,	Ph.B.	28	<i>Coldwater.</i>
George Bruckner			
Rheinfrank,	B.S. (C.E.)		<i>Perrysburg, O.</i>
Ella Elisabeth Riee,			<i>Elkhart, Ind.</i>
Ben Cornelius Rich,	B.S. (C.E.)	10	<i>Englewood, Ill.</i>
Esther Rieh,	B.L.	25	<i>Englewood, Ill.</i>
Ann Loomis Richards,	A.B.	30	<i>Mt. Clemens.</i>
Rena Addie Richards,	A.B.	102	<i>Kalamazoo.</i>
Albert Nelson Richardson,	B.L.	27	<i>Saginaw, East Side.</i>
Frederie Boyd Richardson,	B.L.	30	<i>Caro.</i>
Hedley Viars Richardson,	Ph.B.	103	<i>Detroit.</i>
Lee Stevens Richardson,	B.S. (Mech.E.)	25	<i>Monroe.</i>
Charles Walter Ricketts,	A.B.	57	<i>Charleston, Ill.</i>
Artemas Wilson Riggs,			<i>Kansas City, Mo.</i>
Sara May Riggs,			<i>Nashua, Ia.</i>
Frank Atwood Rinehart,	Ph.B.	12	<i>Pittsburg, Pa.</i>
William Harrison Rippey,	B.S. (C.E.)	25	<i>Sturgis.</i>
Walter Robbins,	B.S. (E.E.)		<i>Marquette.</i>
Effie Lois Roberts,	A.B.	30	<i>Coldwater.</i>
Josephine Louise Roberts,	A.B.	88	<i>La Salle, Ill.</i>
Oscar Roberts,	B.S. (C.E.)	64	<i>Westfield, Ind.</i>
Ralf Laird Roberts,			<i>Ann Arbor.</i>
Seth Erastus Roberts,	B.S. (C.E.)	42	<i>Highland Park.</i>
Minnie Christina Robertson,	A.B.		<i>Battle Creek.</i>
Ada Bessie Robins,	B.L.	28	<i>Saginaw, East Side.</i>
Charles Andrew Robinson,	Ph.B.	43	<i>Muskegon.</i>
Pearl Ernestine Robinson,	B. L.	8	<i>Lansing.</i>
Allen Frank Rockwell,			<i>Ann Arbor.</i>
Hugh Rodman,	B.S. (E.E.)	102	<i>Frankfort, Ky.</i>
Edwin Roedder,	A.B.	126	<i>Oberschefflerz, Baden.</i>
Ellen Chapin Rogers,			<i>Grand Rapids.</i>
Fred Rogers,	B.S. (E.E.)	76	<i>Grand Rapids.</i>
Michael Joseph Rogers,	B.L.	27	<i>Chicago, Ill.</i>

Emma Rohow,			<i>La Crosse, Wis.</i>
Oscar Romel,	B.S. (C.E.)	45	<i>Michigan City, Ind.</i>
Annie Laurie Rooney,	Ph.B.		<i>Manistique.</i>
Bertha Isadore Rose,	Ph.B.		<i>Ann Arbor.</i>
Carlton Raymond Rose,	Ph.B.	64	<i>Ann Arbor.</i>
Herbert Norman Rose,	B.S. (E.E.)	8	<i>Mt. Pleasant.</i>
Menz Israel Rosenbaum,	Ph.B.	31	<i>Kalamazoo.</i>
Edwin John Rosencrans,	B.S. (C.E.)	97	<i>Kankakee, Ill.</i>
William Henry Rosencrans,	B.S. (C.E.)	47	<i>Kankakee, Ill.</i>
James Archibald Ross,	B.S.	61	<i>Perrysburg, O.</i>
Katharine Bradley Ross,	B.S.	99	<i>Terre Haute, Ind.</i>
Mabel Thayer Rouse,			<i>Dowagiac.</i>
Ashley Davenport Rowe,			<i>Bangor.</i>
Lois Bertha Rowe,	B.L.	29	<i>Highland.</i>
Jessie Fremont Ruby,			<i>Union City, Ind.</i>
John Hiram Ruckman,	B.S. (Mech.E.)	47	<i>Saline.</i>
Minnie Ruckman,			<i>Saline.</i>
Eugene Albert Rummler,	B.S. (Mech.E.)	8	<i>Detroit.</i>
Alice Sarah Rush,			<i>Greenville, O.</i>
William Harvey Rush,	B.S. (Bio.)	100	<i>Greenville, O.</i>
Albert Wells Russel,	B.S. (Mech.E.)		<i>Detroit.</i>
George Bagg Russel,	A.B.	32	<i>Detroit.</i>
Ralph Emmett Russell,	A.B.		<i>Battle Creek.</i>
Eugene James Ryan,	Ph.B.		<i>Detroit.</i>
Horton Casparis Ryan,	B.L.	94	<i>Washington, D. C.</i>
May Cecil Ryan,	Ph.B.	7	<i>Ann Arbor.</i>
Fannie Ellis Sabin,			<i>Hinsdale, Ill.</i>
Leland Howard Sabin,	A.B.	24	<i>Centreville.</i>
Richard Edward Sack,	A.B.		<i>Detroit.</i>
Frank Prather Sadler,	A.B.		<i>Grove City, Ill.</i>
Ann Gertrude Sage,			<i>Gobleville.</i>
William Vincent Sage, B.S.,			<i>Gobleville.</i>
<i>Michigan Agr'l Col.,</i>			
Fred Anson Sager,	B.S. (E.E.)	66	<i>Belvidere, Ill.</i>
Wilbur George Salter,	B.S. (Mech.E.)	40	<i>Englewood, Ill.</i>
Esther Lakin Sanborn,	A.B.	44	<i>West Roxbury, Mass.</i>
George Whiting Sanborn,	Ph.B.	94	<i>St. Clair.</i>
Gertrude Ludlow Sanford,			<i>Ann Arbor.</i>
James Harvey Sawyer,	B.S. (C.E.)	25	<i>Ludington.</i>
Theron Malcolm Sawyer,	B.S.		<i>Ludington.</i>
William Schaake,	B.S. (Mech. E.)	47	<i>Grand Rapids.</i>
Nellie Dora Schroll,	Ph.B.	28	<i>Decatur, Ill.</i>
Bertha Barbara Sciurus,	B.L.	104	<i>Saginaw.</i>

Emmet Scott,	B.S. (E.E.)	32	<i>La Porte, Ind.</i>
Frederick Lyle Searing,	A.B.	39	<i>Mankato, Minn.</i>
Fanny May Seaver,	B.L.	35	<i>Middleville.</i>
Lewis Grover Seeley,	A.B.	56	<i>Caro.</i>
Lucie Harrison Seeley,	A.B.		<i>Caro.</i>
Bernard Benjamin Selling,	Ph.B.	75	<i>Detroit.</i>
Charles Wilber Sencen- baugh,	Ph.B.	46	<i>Aurora, Ill.</i>
Henry Mortimer Senter,	B.L.	24	<i>Houghton.</i>
Juliette Sessions,	Ph.B.	101	<i>Columbus, O.</i>
Lurene Seymour,	Ph.B.	31	<i>St. Louis, Mo.</i>
John Benjamin Shanks,	Ph.B.	101	<i>Fairmont, Minn.</i>
Herman Hoopes Sharpless,	B.S. (Mech. E.)	69	<i>Philadelphia, Pa.</i>
Margarette Clark Shaw,	B.S. (C.E.)	53	<i>Big Rapids.</i>
Jennie Willey Sheehan,			<i>Anamosa, Ia.</i>
Sadie Eleanor Sheehan,	Ph.B.	8	<i>Niles.</i>
Isaac Sheets,	B.S. (C.E.)	30	<i>Troy, O.</i>
Roger Sherman,	A.B.	69	<i>Chicago, Ill.</i>
Jennie Belle Sherzer,	Ph.B.	96	<i>Franklin, O.</i>
Edmund Claude Shields,	B.L.	59	<i>Howell.</i>
Samuel Benton Shiley,			<i>Ann Arbor.</i>
Richard Asbury Shipp,	B.L.	141	<i>Salt Lake City, Utah.</i>
Gertrude Shorb,	Ph.B.	79	<i>Decatur, Ill.</i>
Guy Hubbell Sibley,	B.S. (C.E.)	43	<i>Muskegon.</i>
Harry Simons,	A.B.	44	<i>Chicago, Ill.</i>
Lena Berry Simons,	B.L.	8	<i>Lansing.</i>
Charles Everett Skinner,	Ph.B.	4	<i>Adrian.</i>
Fred Gardiner Skinner,			<i>Detroit.</i>
George Richard Slater,	Ph.B.	19	<i>St. Paul, Minn.</i>
Lewis Conrad Sleeper,	Ph.B.		<i>Lansing.</i>
Georgia Smeallie,	B.L.		<i>Independence, Ia.</i>
Charles Beecher Smeltzer,	A.B.	79	<i>Fort Dodge, Ia.</i>
Agnes Hannay Smith,	A.B.	80	<i>Tremont, Ill.</i>
Dietrich Conrad Smith, Jr.,	A.B.	57	<i>Pekin, Ill.</i>
Edward Smith,	B.S. (C.E.)		<i>Ravenswood, Ill.</i>
Frank Hubbard Smith,	B.S.	94	<i>Muskegon.</i>
Harlan Ingersoll Smith,			<i>Saginaw, East Side.</i>
Henry Horace Smith,	A.B.	32	<i>Ionia.</i>
Jeanette Smith,	B.S.		<i>Ann Arbor.</i>
LaVerne Orrilla Smith,	Ph.B.	1	<i>Hubbardston.</i>
Ralph Charles Smith,	B.S. (C.E.)	36	<i>Saginaw, East Side.</i>
Samuel Archie Smith,	A.B.	56	<i>Wilton, N. H.</i>
William Stuart Smith,	B.S. (Mech. E.)	59	<i>Aurora, Ill.</i>

George Rollins Snover,	B.S. (Mech. E.)	11	<i>Detroit.</i>
Charles Henry Snyder,	B.S. (Mech. E.)		<i>Victor, N. Y.</i>
Frank Clement Soper,	B.S. (E.E.)		<i>Ypsilanti.</i>
Annah May Soule,	B.L.	88	<i>Ann Arbor.</i>
Lula Bartlit Southmayd,	A.B.	108	<i>Ann Arbor.</i>
Charles Wilson Southworth,	A.B.	86	<i>Forestville, N. Y.</i>
Charles Lyle Spain,	A.B.	82	<i>South Bend, Ind.</i>
Henry Arthur Spalding,	A.B.	54	<i>Muskegon.</i>
Oliver Lyman Spalding, Jr.,	A.B.	36	<i>St. Johns.</i>
Edward Everett Spear,	B.L.	15	<i>Farragut, Ia.</i>
Franklin Bennett Spear,	Ph.B.	24	<i>Marquette.</i>
Philip Bennett Spear,	Ph.B.	22	<i>Marquette.</i>
Carrie May Sperry,	A.B.	98	<i>Ann Arbor.</i>
Sherman Clark Spitzer,	B.L.	119	<i>Elgin, Ill.</i>
William Albert Spitzley,	A.B.	42	<i>Detroit.</i>
Lester Abbott Stanley,	Ph.B.	23	<i>Kalamazoo.</i>
Goldwin Starrett,	B.S. (Mech. E.)	60	<i>Chicago, Ill.</i>
Fred Henry Staudt,	Ph.B.	57	<i>Aurora, Ill.</i>
George Howe St. Clair,	B.S.		<i>Ishpeming.</i>
Fannie Lucinda Stearns,	B.S. (Bio.)	103	<i>Adrian.</i>
Will Theodore Stebbins,	B.S. (E.E.)	8	<i>Battle Creek.</i>
Elmer Benedict Steiner,	A.B.	77	<i>Kenton, O.</i>
Leander Winslow Steketee,	B.S. (E.E.)	24	<i>Grand Rapids.</i>
Caroline Campbell Sterling,	A.B.	28	<i>Detroit.</i>
Isaac Stern,	B.S. (C.E.)	55	<i>Chicago, Ill.</i>
Bessie Bingham Stevens,	A.B.	12	<i>Ann Arbor.</i>
Robert Clark Stevens,	A.B.	68	<i>Malone, N. Y.</i>
Adrian Delano Stevenson,	B.S. (E.E.)		<i>West Point, Neb.</i>
Evan Stevenson,			<i>Monticello, Ill.</i>
Ada Stewart,	A.B.	9	<i>Peoria, Ill.</i>
Irene Stewart,	A.B.	69	<i>Peoria, Ill.</i>
†Francis Adams Stivers,			<i>Liberty, Ind.</i>
Orion Lincoln Stivers,	Ph.B.		<i>Liberty, Ind.</i>
J. Sterling St. John,	B.S.	34	<i>Ann Arbor.</i>
Margaret Antha St. John,	Ph.B.		<i>Kalamazoo.</i>
Edward George Stockert,			<i>Pekin, Ill.</i>
Margaret Stocking,	B.L.	8	<i>Detroit.</i>
†Robert Royer Stoner,			<i>Centre View, Mo.</i>
Charles William Stratton,	Ph.B.	96	<i>St. Joseph.</i>
Louis A. Strauss,	B.L.	85	<i>Chicago, Ill.</i>
Marian Una Strong,	A.B.	60	<i>Kalamazoo.</i>
Duane Reed Stuart,	A.B.	10	<i>Detroit.</i>
Harry Warner Stuckey,			<i>Ann Arbor.</i>

Grace Delafield Sturges,	Ph.B.	16	<i>Oak Park, Ill.</i>
Mary Mathews Sturges,	B.S. (Bio.)	92	<i>Oak Park, Ill.</i>
Arthur Jay Sturgis,	B.S. (C.E.)	33	<i>Sturgis.</i>
Eugene Cornelius Sullivan,	B.S. (Chem.)	64	<i>Chicago, Ill.</i>
Michael Sullivan,			<i>Detroit.</i>
Bertrand Stager Summers,	B.S. (Chem.)	74	<i>Fort Sheridan, Ill.</i>
Edson Read Sunderland,	A.B.		<i>Ann Arbor.</i>
Gertrude Sunderland,	A.B.	47	<i>Ann Arbor.</i>
Horace Wright Suydam,	B.S. (E.E.)	42	<i>Toledo, O.</i>
Frank Van Vechten Swan,	B.S. (E.E.)		<i>Flint.</i>
Brown Fred Swift,	B.S.	123	<i>Chicago, Ill.</i>
James Marcus Swift,	A.B.	23	<i>Fall River, Mass.</i>
Maude Tabor,	Ph.B.	11	<i>Benton Harbor.</i>
Amy Eliza Tanner,	A.B.	84	<i>Faribault, Minn.</i>
George Welles Tanner,	B.S. (E.E.)	12	<i>Faribault, Minn.</i>
Wellington Clute Tate,	B.S. (E.E.)	37	<i>Ann Arbor.</i>
Andrew Richardson Taylor,			<i>Ann Arbor.</i>
Edward Everett Taylor,	Ph.B.	96	<i>Owosso.</i>
Harriet Shourds Taylor,	Ph.B.	5	<i>Detroit.</i>
John Burnham Taylor,	A.B.	65	<i>Ann Arbor.</i>
Martha Dickinson Taylor,			<i>Ann Arbor.</i>
May E. Taylor,	Ph.B.	32	<i>Ann Arbor.</i>
William Willard Taylor,	B.S. (M.E.)	91	<i>Ann Arbor.</i>
Lucy Elizabeth Textor,	Ph.B.	68	<i>Chicago, Ill.</i>
Charles Ladd Thomas,	Ph.B.	57	<i>Omaha, Neb.</i>
Herman Pennock Thomas,	A.B.	32	<i>Cassopolis.</i>
Annie Sayre Thompson,			<i>Ann Arbor.</i>
Lillian Wallace Thompson,	Ph.B.	37	<i>Englewood, Ill.</i>
Mary Braley Thompson,	A.B.	117	<i>Adrian.</i>
Sarah E. Thompson,			<i>Romeo.</i>
Warren Hamilton Thompson,	B.S. (Mech. E.)	26	<i>Worden.</i>
William Harold Thompson,	B.S.	32	<i>Alexandria, Minn.</i>
Darling Zena Thomson,			<i>Lake Charles, La.</i>
Walter Hannibal Thorpe,	Ph.B.		<i>Detroit.</i>
Frederick William Thrum,			<i>Honolulu, H. I.</i>
Matie E. Ticknor,			<i>Ann Arbor.</i>
Orrin Edward Tiffany,			<i>Spring Arbor.</i>
John Beach Tillotson,	B.S. (Chem.)		<i>Owosso.</i>
Likercus Corey Todd,	B.L.		<i>Hamburg.</i>
May Totman,	B.L.		<i>La Grange, Ill.</i>
Charles Gambell Towar,	B.S. (E.E.)		<i>Detroit.</i>
Elmer Kelso Towl,	B.L.	76	<i>Decatur, Ill.</i>

George Thomas Towl,	B.S.	99	<i>Muskegon.</i>
Anna Trainor,			<i>Ottawa, Ill.</i>
Warren Wesley Travis,	B.L.		<i>La Porte, Ind.</i>
Lizzie Trebilcox,	A.B.		<i>Ypsilanti.</i>
George T. Tremble,	Ph.B.	66	<i>Marshall.</i>
James Henry Trott,	B.L.	30	<i>Oil City, Ont.</i>
Allan Cooke Tryon,			<i>Spartansburg, Pa.</i>
Nelson John Tubbs,	B.S. (C.E.)	27	<i>Carlisle.</i>
Monna Julia Tucker,	B.L.	8	<i>Ann Arbor.</i>
George Balfour Tunstead,	B.S. (E.E.)		<i>Oxford.</i>
George Tupper,	B.S.	34	<i>Kaneville, Ill.</i>
Horace Tupper, Jr.,			<i>Bay City.</i>
Virgil Tupper,			<i>Bay City.</i>
Alonzo Hubert Tuttle,	A.B.		<i>Decatur, Ill.</i>
Grace L. Tuttle,			<i>Leslie.</i>
Ruth Moorhead Tuttle,	Ph.B.	8	<i>Niles.</i>
William King Twiss,	B.S. (E.E.)		<i>Port Huron.</i>
William David Tyrrell,	B.S.	14	<i>Elgin, Ill.</i>
Jeannette A. Underwood,			<i>Elgin, Ill.</i>
Emmet Pitt Updegraff,			<i>Leadville, Col.</i>
Louise Helmuth Uren,	B.L.		<i>Calumet.</i>
Edward Hamilton Vail,	B.L.	102	<i>Ann Arbor.</i>
Christopher Van Deventer,	B.S. (C.E.)	36	<i>Knoxville, Tenn.</i>
Fayette Flournoy Van Deventer,	B.S. (C.E.)	32	<i>Knoxville, Tenn.</i>
Anna Marie Van Housen,	Ph.B.	93	<i>Ann Arbor.</i>
Homer Van Landegend,			
A.B., <i>Hope College,</i>	B.S. (C.E.)		<i>Holland.</i>
Helen Frederica Van Liew,	B.L.		<i>Hinsdale, Ill.</i>
Belle Vansant,			<i>Newtown, Pa.</i>
Frank Collins Van Sellar,			<i>Paris, Ill.</i>
Frank Foster Van Tuyl,	B.S. (E.E.)	39	<i>Detroit.</i>
Harry Isaac Van Tuyl,	B.S.	83	<i>Ypsilanti.</i>
Horace Hill Van Tuyl,	Ph.B.		<i>Detroit.</i>
Claude Halstead Van Tyne,			<i>Tecumseh.</i>
Edla May Van Winkle,	Ph.B.	29	<i>Detroit.</i>
Bertram Stetson Varian,	B.L.	20	<i>Salt Lake City, Utah.</i>
Charles Francis Vaughn,	B.S.	94	<i>Ann Arbor.</i>
John Walter Verdier,	B.S.	33	<i>Grand Rapids.</i>
Arthur Henry Veysey,	A.B.	98	<i>Ann Arbor.</i>
Lillie Mae Volland,	B.L.	39	<i>Ann Arbor.</i>
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Alice Emily Wadsworth,	B.L.	62	<i>Chicago, Ill.</i>
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Martha Waite,			<i>Oregon, Ill.</i>
Cassius Edward Wakefield,	B.S.	27	<i>Morenci.</i>
John Van Hoesen Wakeman,	B.S. (Mech.E.)	30	<i>Chicago, Ill.</i>
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Ellis David Walker,	B.S.	121	<i>Saline.</i>
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Mary Elizabeth Wallace,	A.B.		<i>Coldwater.</i>
Walter George Wallace,	B.S. (Chem.)	101	<i>Flat Rock.</i>
Ethel Walmsley,	B.S.		<i>La Grange, Ill.</i>
May Walmsley,	Ph.B.	36	<i>La Grange, Ill.</i>
Edward Harris Waples,	Ph.B.	23	<i>Ann Arbor.</i>
Margaret Evelyn Waples,	B.L.	99	<i>Ann Arbor.</i>
William Bullock Ward,	A.B.	55	<i>Chicago, Ill.</i>
Agnes Mary Warren,			<i>Springfield, Ill.</i>
Ernest Haven Warren,	B.L.	66	<i>Hinsdale, Ill.</i>
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Fred Waterhouse,	B.S. (C.E.)	56	<i>Honolulu, H. I.</i>
Edward Lacy Watrous,	B.L.	64	<i>Des Moines, Ia.</i>
Carrie May Watson,	B.S.	106	<i>Ann Arbor.</i>
Elba Emanuel Watson,	B.L.	41	<i>Grand Rapids.</i>
Elbert Alexander Watson,			<i>Detroit.</i>
Richard Herbert Watts,	Ph.B.		<i>Adrian.</i>
Syle Way,	B.L.		<i>Shanghai, China.</i>
George Cabot Weare,	B.S. (Mech.E.)	70	<i>Chicago, Ill.</i>
Harry Cabot Weare,	B.S. (Mech.E.)	8	<i>Chicago, Ill.</i>
Joseph Weare,	B.S. (C.E.)	77	<i>Chicago, Ill.</i>
Otto Louis Edgar Weber,	B.S. (Mech.E.)	76	<i>Ann Arbor.</i>
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Edward Chester Weeks,	Ph.B.	31	<i>Jackson.</i>
Margaret Weidemann,	B.S. (Bio.)	37	<i>Ann Arbor.</i>
Robert Major Weidemann,	B.S. (E.E.)	11	<i>Ann Arbor.</i>
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Lizzie Anna Wrege,			<i>Saginaw, East Side.</i>
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Elizabeth Young,			<i>Detroit.</i>
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Julia Ione Stannard, M.D.,	<i>Dexter.</i>
Fred Eugene Warren, M.D.,	<i>Denver, Col.</i>

FOURTH YEAR STUDENTS.

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William Coleman Armstrong,	<i>Nelson, Pa.</i>
Samuel Howard Arthur, D.D.S.,	<i>Ann Arbor.</i>
James Meade Atkinson,	<i>Warren, O.</i>
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William Blair,	<i>Chambersburg, Pa.</i>
Morell Deloss Cadwell,	<i>Leon, O.</i>
Anna Clapperton,	<i>Grand Rapids.</i>
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Rosemond Luella Hathway,	<i>East Liverpool, O.</i>
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Leroy Bromwell Humphrey,	<i>Greensburg, Pa.</i>
Aleck Franklin Hutchinson,	<i>Clyde, O.</i>
Maria P. de Booij Ingram,	<i>Brooklyn, N. Y.</i>

John Henry Jones,	<i>Dowagiac.</i>
Harry James Kennedy, A.B.,	<i>Ionia.</i>
Stella Kirby, B.S., <i>Washburn College,</i>	<i>Burlingame, Kan.</i>
Alvena Mauerhan,	<i>Parma.</i>
Deville J. Moyer,	<i>Stony Forks, Pa.</i>
Archibald Lawrence Muirhead,	<i>Ann Arbor.</i>
James Perry Odell,	<i>Fremont.</i>
Frank Dean Patterson, A.B., <i>Cornell</i>	
<i>University,</i>	<i>Marshall.</i>
William Wilson Pearson,	<i>Springfield, Ill.</i>
Frank Beckham Powers, A.B., <i>University</i>	
<i>of Tennessee,</i>	<i>Knoxville, Tenn.</i>
George Roberts,	<i>Buffalo, N. Y.</i>
Henry Rudolph Roether,	<i>Perrysburg, O.</i>
Charles Whittall Root,	<i>Ann Arbor.</i>
Mary Sanderson,	<i>Amherst, Mass.</i>
William Oscar Sauermann,	<i>Detroit.</i>
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Sarah Amelia Wilcox Soule,	<i>Ann Arbor.</i>
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Frank Alsworth Waples, B.S.,	<i>Ann Arbor.</i>
William Adam Wehe,	<i>Topeka, Kan.</i>
Emma Hammond Wheeler,	<i>New Bedford, Mass.</i>
Robert Henry Wolcott, B.L., B.S.,	<i>Grand Rapids.</i>
Truman Norton Yeomans,	<i>Oxford, N. Y.</i>

THIRD YEAR STUDENTS.

NAME.

RESIDENCE.

Ernest Marion Adams,	<i>Battle Creek.</i>
Minnie Maud Allen,	<i>Portland, Ore.</i>
Robert Bruce Armstrong, Ph.C.,	<i>Saginaw, East Side.</i>
James Rae Arneill, A.B., <i>Lawrence Uni-</i>	
<i>versity,</i>	<i>Ventura, Cal.</i>
Meritt Moses Ayers,	<i>Tedrow, O.</i>
Arthur Melvin Beatty,	<i>Battle Creek.</i>
Frithiof Emil Berge,	<i>Sturgeon Bay, Wis.</i>
Clarissa Sophia Bigelow, Ph.B.,	<i>Ann Arbor.</i>
Vacil Demetroff Bozovsky,	<i>Stanimaka, Bulgaria.</i>
James Fleming Breakey,	<i>Ann Arbor.</i>
Christopher Brogan, Jr.,	<i>White Oak.</i>

Sidney Payne Budgett,	<i>Portland, Ore.</i>
George Warner Burleigh,	<i>Battle Creek.</i>
Edgar Robert St. John Caro,	<i>Battle Creek.</i>
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John Alexander Donovan,	<i>Gladstone.</i>
George Henry Dow,	<i>Battle Creek.</i>
Calvin R. Elwood,	<i>Pontiac.</i>
Sallie Price Falconer,	<i>Fort Smith, Ark.</i>
John William Foley,	<i>Ann Arbor.</i>
Joseph Foster, B.S., <i>Michigan Agricultural</i>	
<i>College,</i>	<i>Lansing.</i>
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Stephen Clifton Glidden,	<i>Spokane, Wash.</i>
James Louis Heard,	<i>North East, Pa.</i>
Clarence Burke Hernam,	<i>Grand Rapids.</i>
Howard Herrington,	<i>Santa Clara, Cal.</i>
Frederick William Heysett,	<i>Ludington.</i>
Brainard Spencer Higley, Jr.,	<i>Youngstown, O.</i>
Minnie Hoagland,	<i>Howell.</i>
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Elijah Mark Houghton,	<i>Therese, N. Y.</i>
Annie Ives,	<i>Sparta, Ont.</i>
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Lauretta Kress,	<i>Battle Creek.</i>
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<i>College,</i>	<i>Archbold, O.</i>
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<i>College of Pharmacy,</i>	<i>Allegan.</i>
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Ephraim Harrison Winter,	<i>Warren Mills, Wis.</i>
Walter George Wright,	<i>Grinnell, Ia.</i>

SECOND YEAR STUDENTS.

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Florence Almeda Amidon,	<i>Sturgis.</i>
Katharine Louise Angell,	<i>Chicago, Ill.</i>
William Gilbert Archer,	<i>Battle Creek.</i>
William Richardson Bagley,	<i>St. Charles, Ill.</i>
Helen Grace Baldwin,	<i>Battle Creek.</i>
Adam John Baumhardt, Ph.C.,	<i>Hutchinson, Kan.</i>
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Arthur Carl Dennert,	<i>Elkhart, Ind.</i>
Peter Donnelly,	<i>Napoleon, O.</i>
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Frank Stanley Pierce,	<i>Utica.</i>
Philip Henry Quick,	<i>Noble.</i>
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Francis Purvis Midlam,	<i>Marquette.</i>
William Lee Miller,	<i>Jacksonville, Ore.</i>
Leon Keck Montgomery,	<i>Bolckow, Mo.</i>
Warren Stone Morey,	<i>Charlotte.</i>
Norman Blake Morrell,	<i>Jackson.</i>
William Edward Mullen,	<i>McCook, Neb.</i>
John Wales Murdoch,	<i>Wabasha, Minn.</i>
George Willis Nattinger, A.B., <i>Griswold</i>	
<i>College,</i>	<i>Lyons, Ia.</i>
George Robert Neil,	<i>Jacksonville, Ore.</i>
James Brannan Nelson,	<i>Greencastle, Ind.</i>

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<i>University,</i>	<i>Seattle, Wash.</i>
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George Frank Rich,	<i>Bethel, Me.</i>
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George Casebere Rings,	<i>West Unity, O.</i>
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Harvey Arctas Evans, A.B., B.S., <i>Southern</i>	<i>Metropolis, Ill.</i>
<i>Normal College,</i>	<i>Denison, Tex.,</i>
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Albert Eugene Felmley, B.S., <i>Iowa State</i>	<i>Cedar Falls, Ia.</i>
<i>Normal College,</i>	

George Franklin Felts,	<i>Fort Wayne, Ind.</i>
Raymond Marshall Ferguson,	<i>Middleville.</i>
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Charles Fitzgerald,	<i>Kentland, Ind.</i>
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Jesse Carl Foulks,	<i>Topeka, Kan.</i>
Luther Blanchard Freeman,	<i>St. Paul, Minn.</i>
Benjamin Friend,	<i>Creston, Ia.</i>
Thomas Frank Fulkerson,	<i>Trenton, Mo.</i>
George Washington Fuller,	<i>Potsdam, N. Y.</i>
William J. Galbraith,	<i>Gardner, Ill.</i>
Oscar Charles Garrett,	<i>Elsie.</i>
William Henry Harrison Garver,	<i>Monticello, Ill.</i>
George Jacob Genebach,	<i>Brooklyn.</i>
Cyrus William George,	<i>Englewood, Ill.</i>
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James Joseph Harrington,	<i>O'Neill, Neb.</i>
Hyrum Smith Harris,	<i>Monroe, Utah.</i>
Joseph Alma Harris,	<i>Monroe, Utah.</i>
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Jay LeRoy Hitchcock,	<i>Pontiac.</i>
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 Andrew McCardell,
 Russell Norman McConnell,
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Saginaw, East Side.
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Octavius John Charge Wray,	<i>Red Jacket.</i>
John Wright,	<i>Tucson, Ariz.</i>
Harry Leroy Yartin,	<i>Jackson.</i>
George Frederick Zimmerman,	<i>Mount Vernon, Ind.</i>
John William Zuber,	<i>Antwerp, O.</i>

SPECIAL STUDENTS.

NAME.	RESIDENCE.
Willis Clayton Belknap, A.B., <i>Dartmouth College,</i>	<i>Montpelier, Vt.</i>
Albert Newton Blessing,	<i>Petersville, Ind.</i>
William Melvin Brooks,	<i>Creston, Ia.</i>
Henry Harlan Brown,	<i>West Liberty, Ky.</i>
Fitzhugh Burns, A.B.,	<i>Kalamazoo.</i>
Benjamin De Vries,	<i>Grand Rapids.</i>
William Robert Hall,	<i>Breckenridge, Mo.</i>
John Alvin Lee,	<i>Ann Arbor.</i>
Hugh Boyd McCullough,	<i>Grove Summit, Pa.</i>
William Oliver Morrow,	<i>Union City, Pa.</i>
D. Joseph Renihan,	<i>Allegan.</i>

The students named below, enrolled in the Department of Literature, Science, and the Arts, also pursue studies in the Department of Law.

Gerrit Henry Albers, A.B., <i>Hope College,</i>	<i>Grand Rapids.</i>
Holbrook Gilson Cleaveland,	<i>Plymouth, Ind.</i>
Frank Henry Decke,	<i>Lansing.</i>
Charles Arza Denison,	<i>Decatur, Ill.</i>
Henry Arthur Friedman,	<i>Muskegon.</i>
Vladimir August Geringer,	<i>Chicago, Ill.</i>
Humphrey Snell Gray,	<i>Ludington.</i>
Samuel Smith Harris,	<i>Detroit.</i>
John Stanley Hurd,	<i>Detroit.</i>
George Edward Kollen,	<i>Holland.</i>
Franz Christian Kuhn,	<i>Mt. Clemens.</i>
Hedley Vicars Richardson,	<i>Detroit.</i>
Richard Asbury Shipp,	<i>Salt Lake City, Utah.</i>
Sherman Clark Spitzer,	<i>Elgin, Ill.</i>

School of Pharmacy.

FACULTY.

JAMES B. ANGELL, LL.D., *President*,
ALBERT B. PRESCOTT, PH.D., M.D., *Dean*,
WILLIAM H. PETTEE, A.M.,
VOLNEY M. SPALDING, A.B.,
OTIS C. JOHNSON, PH.C., A.M.,
PAUL C. FREER, PH.D., M.D.,
EDWARD D. CAMPBELL, B.S.,
ALVISO B. STEVENS, PH.C., *Secretary*,
DAVID M. LICHTY, M.S.,
IULIUS O. SCHLOTTERBECK, PH.C., B.S.

Assistants.

MOSES GOMBERG, M.S.,
BERNHARD C. HESSE, PH.C.
ROY D. YOUNG, PHAR.M.

STUDENTS.

RESIDENT GRADUATES.

NAME.	RESIDENCE.
Shinichi Ando, Ph.C.,	<i>Tokio, Japan.</i>
Emerson Romeo Miller, Ph.C.,	<i>Ann Arbor.</i>

SECOND YEAR STUDENTS.

NAME.	RESIDENCE.
Francis Frederick Adams, Jr.,	<i>Milwaukee, Wis.</i>
Clarence Eugene Barnhart,	<i>Peoria, Ill.</i>
Lou Newton Benton,	<i>Kaneville, Ill.</i>
Fred Newton Chapel,	<i>Grand Blanc.</i>

Sheldon Coleman,	<i>Kalamazoo.</i>
David Lake Davoll, Jr.,	<i>Amesbury, Mass.</i>
William W. Dunning,	<i>Charlotte.</i>
Fred Faber,	<i>Pulaski, O.</i>
Lovell Farnum,	<i>Almont.</i>
John David Fromm,	<i>Toledo, O.</i>
Lillian Missouri Geddes,	<i>Winchendon, Mass.</i>
Abner B. Graham,	<i>Grand Blanc.</i>
L. D. Havenhill,	<i>Fox, Ill.</i>
Charles Otis Hill, A.B. (<i>Univ. of Tennessee</i>),	<i>Knoxville, Tenn.</i>
Charles Elsworth Jackson,	<i>Canal Fulton, O.</i>
Carl Wallace Jones,	<i>Plainwell.</i>
John Henry Jones,	<i>Cumberland, Md.</i>
George Victor Juhler,	<i>Pomeroy, O.</i>
Samuel Robert Knox,	<i>Livonia, Ind.</i>
Charles Merkel,	<i>Charlotte.</i>
George Alexander Morris,	<i>Dexter.</i>
Welles Blackwood Newton,	<i>Bowling Green, O.</i>
Frederick Holland Nickerson,	<i>Greenwich, O.</i>
Delia O'Connor,	<i>Lapeer.</i>
Bessie Gillespie Pierce,	<i>West Bay City.</i>
Karl Edwin Rudolph,	<i>Oberlin, O.</i>
William Scherer,	<i>Rochester, N. Y.</i>
Carl Edward Smith,	<i>Wilmington, N. C.</i>
Charles Henry Steincamp,	<i>Toledo, O.</i>
Rollin S. Tidrick,	<i>Bringham, Ind.</i>
George McAlpine Tyng,	<i>Victoria, Tex.</i>
George Wagner,	<i>New Ulm, Minn.</i>
Silas Grant Wertz,	<i>Mt. Pleasant, Pa.</i>

FIRST YEAR STUDENTS.

NAME.	RESIDENCE.
Ransom Sidney Armstrong,	<i>Chelsea.</i>
Homer Carr Blair,	<i>Leslie.</i>
Noah Henry Bleckner,	<i>Oak Harbor, O.</i>
Clifford Egbert Corwin, A.B. (<i>Marietta Coll.</i>),	<i>New Suffolk, N. Y.</i>
Charles Ernest Crittenden,	<i>Frankfort.</i>
George Doehne, Jr.,	<i>New Ulm, Minn.</i>
Arthur Wilson Epley,	<i>Franklin, Pa.</i>
Harry Hall Hudson,	<i>Colorado Springs, Col.</i>
William Arthur Jones,	<i>Ann Arbor.</i>
Maynard Elmer Kellogg,	<i>Marshalltown, Ia.</i>
Edgar Livingstone Knapp,	<i>Saginaw.</i>

James W. T. Knox,
 Sol William Levy,
 Edward J. Matthews,
 Frank Leslie McClintic,
 James C. McGregor,
 Grace Ellen McNoah,
 Hannah A. McNoah,
 Allen Henry Mead,
 Garry Windsor Messenger,
 Frank Albert Moon,
 John Harry Moore,
 Le Roy Hiram Moss,
 Thomas E. Murdock,
 Marion Franklin Nichols,
 Henry Albert Parmalee,
 Fred Lyle Robertson,
 Ralph Blair Rowland,
 Sebastian Fabian Schick,
 David S. Schweitzer,
 Wilbur Benson Scott,
 James Seymour,
 Clark Elbert Smith,
 Isaac Franklin Steiner,
 George Charles Steventon,
 Ross Clifford Tatem,
 John Ludwell Tegarden,
 Maude Van Kleek,
 Marvin George Vaughan,
 William Franklin Warner,
 Edward Eugene Washburn,
 Horace Houghton Waters,
 Carl Ernst Louis Weber,
 Barry Wellman,
 Charles Henry Williams, Ph.B. (*Adrian
 College*),
 Parke Ernest Wise,
 Winthrop Hosmer Wright,

Alvarado, Tex.
Detroit.
Bryan, O.
Charlotte.
Birch Run.
Ann Arbor.
Ann Arbor.
Oberlin, O.
Spring Lake.
Lowell.
Philadelphia, Pa.
Maple Rapids.
Ypsilanti.
Beach City, O.
Hillsdale.
Amesbury, Mass.
Oberlin, O.
Mount Pulaski, Ill.
Leipsic, O.
Peoria, Ill.
Ann Arbor.
Grand Blanc.
Bluffton, O.
Youngstown, O.
Hartwell, O.
Campbellsburg, Ind.
Ann Arbor.
Ann Arbor.
Belle Flower, Ill.
New London, O.
Monroe.
Toledo, O.
Hastings.

Adrian.
Cedar Falls, Ia.
North Adams.

Homœopathic Medical College.

FACULTY.

JAMES B. ANGELL, LL.D., *President*,
HENRY L. OBETZ, M.D., *Dean*,
JAMES C. WOOD, A.M., M.D.,
DANIEL A. MacIACHLAN, M.D., *Secretary*,
CHARLES GATCHELL, M.D.,
CHARLES S. MACK, A.B., M.D.

OSCAR R. LONG, M.D.,
Non-Resident Lecturer on Mental Diseases.

Other Instructors and Assistants.

ERNEST A. CLARK, M.D.,
CHARLES W. BEHM, M.D.,
CYRUS M. THURSTON, M.D.,
FRED J. PECK, M.D.

STUDENTS.

RESIDENT GRADUATE.

NAME.	RESIDENCE.
Gertrude H. Frommholz McGahey, M.D., <i>Fort Wayne College of Medicine,</i>	<i>Cedar River.</i>

FOURTH YEAR STUDENTS.

NAME.	RESIDENCE.
Roy Leighton Bently,	<i>Ionia.</i>
Ernest C. Brown,	<i>Dexter.</i>
George Frederic Clark, Jr.,	<i>Aylmer, Ont.</i>
Nora May Dakin,	<i>Dansville.</i>

Mabel Geneva Dixey,	<i>Fremont, O.</i>
Franklin Henderson Doud,	<i>Victory, N. Y.</i>
Elman Parker Felch,	<i>Grand Rapids.</i>
Samuel Harrell,	<i>Detroit.</i>
Clifford Reeder Hervey,	<i>Granville, O.</i>
Francis Leslie Hoffman,	<i>Nashville.</i>
Frederick Charles Krümling,	<i>Roseville.</i>
Frederick Clifton Laur,	<i>Aylmer, Ont.</i>
John Alexander Lenfestey,	<i>Strathroy, Ont.</i>
Linal Rideout Lumby,	<i>Pontiac.</i>
Fannie Eliza Nieberg,	<i>St. Mary's, O.</i>
Henry Martyn Northam,	<i>Meadville, Pa.</i>
Issie Sharring Powers,	<i>Grand Rapids.</i>
Oscar Luman Ramsdell,	<i>South Westerlo, N. Y.</i>
Frank Rich,	<i>Englewood, Ill.</i>
Charles Kimball Stewart,	<i>Lake Mills, Ia.</i>
Harvey George Young,	<i>Pioneer, O.</i>

THIRD YEAR STUDENTS.

NAME.	RESIDENCE.
William Hodgins Atterbury,	<i>Kalamazoo.</i>
Rose Anna Bower,	<i>Delta, Pa.</i>
Charles Augustus Critchlow,	<i>Bloomington, Wis.</i>
Cloyd Harry Duncan,	<i>Bridgeport, O.</i>
Charles Gifford Jenkins,	<i>Mason.</i>
Harriet Leah McPherson,	<i>Adrian.</i>
Lester Elmer Peck,	<i>Buchanan.</i>
Evelyn Sarah Pettit,	<i>Belmont, Ont.</i>
Susan Emmo Pullin,	<i>Lawrence, Kan.</i>
Charles William Ryan,	<i>Ypsilanti.</i>
Cora Luarky Stitt,	<i>Stockbridge.</i>
Glenn Guy Towsley,	<i>Portland.</i>
Burt Dexter Walker,	<i>Kalamazoo.</i>

SECOND YEAR STUDENTS.

NAME.	RESIDENCE.
Charles Allen Betts,	<i>Ypsilanti.</i>
Guy Mortimer Canfield,	<i>Detroit.</i>
Edwin Oscar Colvin,	<i>Buchanan.</i>
Grace Gardiner,	<i>Siverly, Pa.</i>
Charles Edward Marshall,	<i>Fredonia, N. Y.</i>
Fred David Mayer,	<i>Fremont, Neb.</i>
Stillman Burr Montique,	<i>Flint.</i>

John Andrew Morrisey,	<i>Caledonia, N. Y.</i>
Mark Elmer Topping,	<i>Morrice.</i>
Howard Elhanan Whitney,	<i>Ypsilanti.</i>

FIRST YEAR STUDENTS.

NAME.	RESIDENCE.
Charles Armstrong,	<i>Palmyra, Ont.</i>
John Newton Babcock,	<i>Ann Arbor.</i>
Byron Edmund Buckingham,	<i>Grand Rapids.</i>
Sumner George Bush,	<i>St. Louis.</i>
Charles Henry Carlin,	<i>Gloversville, N. Y.</i>
David Plesent Crawford,	<i>Decatur, Ill.</i>
Fred Charles Gilcher,	<i>Sandusky, O.</i>
Jennie Holman Griffin,	<i>Canajoharie, N. Y.</i>
Rob M. Hanson,	<i>London, O.</i>
Arthur Sinclair Kenaga,	<i>Kankakee, Ill.</i>
Idelle Kidder,	<i>Terre Haute, Ind.</i>
Frank Julius Libbey,	<i>Berkshire, Vt.</i>
Harvey Martin,	<i>Albion.</i>
Fred Alvord Miner,	<i>Ann Arbor.</i>
Ashbel Fairchild Ruble, B.S., <i>Franklin</i>	
<i>College,</i>	<i>Limestone, W. Va.</i>
Ernest Walstene Spinney,	<i>Detroit.</i>
Oscar Burchard Webster,	<i>Lake Helen, Fla.</i>
Seymour Woodworth,	<i>Lansing.</i>

College of Dental Surgery.

FACULTY.

JAMES B. ANGELL, LL.D., *President*,
CORYDON L. FORD, M.D., LL.D.,
JONATHAN TAFT, M.D., D.D.S., *Dean*,
JOHN A. WATLING, D.D.S.,
WILLIAM H. DORRANCE, D.D.S.,
NELVILLE S. HOFF, D.D.S.,
DAVID M. LICHTY, M.S.,
CYRENUS G. DARLING, M.D.

Assistants.

LOUIS P. HALL, D.D.S.,
ALLISON W. HAIDLE, D.D.S.

STUDENTS.

RESIDENT GRADUATES.

NAME.	RESIDENCE.
Burdette Charles Hinkley, D.D.S., <i>Ohio</i> <i>College of Dental Surgery,</i>	<i>North Fairfield, O.</i>
Elisha Dawley Hinkley, D.D.S., <i>Ohio</i> <i>College of Dental Surgery,</i>	<i>Bucyrus, O.</i>
John Morton McIlvain, D.D.S., <i>University</i> <i>of Maryland,</i>	<i>Providence, R. I.</i>
Louis N. Seymour, D.D.S., <i>Philadelphia</i> <i>Dental College,</i>	<i>New York, N. Y.</i>
Edward Grant Snodgrass, D.D.S., <i>Ohio</i> <i>College of Dental Surgery,</i>	<i>Piqua, O.</i>
Carrie Marsden Stewart, D.D.S.,	<i>Ann Arbor.</i>
Vernon Anderson Williams, D.D.S., <i>Vander-</i> <i>bilt University,</i>	<i>Cloverdale, Cal.</i>

SENIORS.

NAME.	RESIDENCE.
Charles William Adamson,	<i>Boston, Mass.</i>
Alexander Robert Allen,	<i>Ann Arbor.</i>
Arthur William Ball,	<i>Ann Arbor.</i>
Frank Irving Ball,	<i>Fremont, O.</i>
Frank Walter Boyer,	<i>Wadsworth, O.</i>
Herbert John Burke,	<i>Ann Arbor.</i>
Charles Arthur Church,	<i>Port Huron.</i>
William Jesse Clark,	<i>McMinnville, Ore.</i>
Herbert Dean Clements,	<i>Faribault, Minn.</i>
William Arthur Conlan,	<i>Chelsea.</i>
John Angell Cook,	<i>Ypsilanti.</i>
Milton James Cook,	<i>Allegan.</i>
G. Otis De Urfae,	<i>Cleveland, O.</i>
Harry Devillo Geiger,	<i>Springport.</i>
Albertus Christian Van Raalte Gilmore,	<i>Holland.</i>
Eugene Milton Graves,	<i>Sheridan, Ore.</i>
James Grey,	<i>Port Huron.</i>
Charles Augustus Hawley,	<i>Milan, O.</i>
Marcellus Grant Hillman,	<i>Fenton.</i>
William Smith Hinckley,	<i>Paw Paw.</i>
Frank S. James,	<i>Hudson.</i>
Richard Davey Jones,	<i>Hancock.</i>
John William Kasbeer,	<i>Kasbeer, Ill.</i>
Herman Kreit,	<i>Detroit.</i>
Arthur Frederick Leuty,	<i>Lansing.</i>
George Blakesley Little,	<i>Davenport, Ia.</i>
Edward Ballard Lodge,	<i>Cuyahoga Falls, O.</i>
George Hutchinson Mann,	<i>Ann Arbor.</i>
John Archibald McAlister,	<i>Logan, Utah.</i>
Robert Duncan McBride,	<i>Detroit.</i>
William McFarlane,	<i>Nairn, Ont.</i>
Jesse James McMullen,	<i>Fairfield, Ia.</i>
Thomas Byron Mercer,	<i>Wausau, Wis.</i>
Charles Lester Mitchell,	<i>Miamisburg, O.</i>
Walter Samuel Moore,	<i>Ann Arbor.</i>
Mason Moyer,	<i>Elkhart, Ind.</i>
Ethelwyn Phillips,	<i>Wigan, England.</i>
Fred M. Prettyman,	<i>Ann Arbor.</i>
Weston Andrew Valteau Price,	<i>Newburg, Ont.</i>
Greenbury Albert Rawlings,	<i>Sterling, N. Dak.</i>
John George Schindler,	<i>Bay City.</i>

Frank Edward Seybold,
 John Francis Spring,
 Milton Russell Stimson,
 Burt Sidney Sutherland,
 Sherman Hartwell Swift,
 Will Hamilton Van Deman,
 John Hoffman Van den Berg,
 William Henry Van Iderstine,
 Milton Tate Watson,
 Will Lloyd Webster,
 Henry Dudley Wilber,

Ann Arbor.
Roseburg.
Ann Arbor.
Ann Arbor.
Edinboro, Pa.
Washington Court House, O.
Grand Haven.
Marquette.
Jackson.
Norwalk, O.
East Constable, N. Y.

JUNIORS.

NAME.

Della Cordelia Ostrander Adams,
 Frank Paxson Adams,
 Charles Francis Amsden,
 Otto Anderson,
 Delbert Hawthorne Babcock,
 Edwin Irving Backus,
 Andrew Spencer Bailey, B.S., *Lawrence*
 University,
 Roy Edwin Bailey,
 Amos Barnes,
 Fred William Blake,
 Henry Martyn Bridgman, Jr.,
 Lewis Nathan Burke,
 Damon Isaiah Butler,
 Thomas Sherman Buzzard,
 Anthony Joseph Casey,
 Charles Douglas Cassidy,
 Frederick Henry Coddington,
 Estus Hammond Collier,
 Gerald Willard Collins,
 Robert Edgar Davies,
 Frank Benjamin Dawley,
 James King Douglass,
 Fred Edward Eberbach,
 William Booth Elster,
 Edward Leigh Gedney,
 William E. Goucher,
 Myron Perry Green,
 Harry Loyal Griswold,

RESIDENCE.

Ann Arbor.
Elkhart, Ind.
Norwalk, O.
Ypsilanti.
Bay City.
Edwardsburg.

Appleton, Wis.
Pontiac.
Hillsdale.
Ann Arbor.
Umzumbe, Natal, So. Africa.
Niles.
Ann Arbor.
Ann Arbor.
West Branch.
Brooklyn, N. Y.
Dowagiac.
Battle Creek.
Ann Arbor.
Chateaugay, N. Y.
Fowlerville.
Berlin Heights, O.
Ann Arbor.
Weeping Waters, Neb.
Minneapolis, Minn.
Corunna.
Charlotte.
White Hall, Ill.

Alfred Whipple Hall,
 William Antony Hart,
 Garrett Sylvester Hartley,
 Charles Pinckney Haselden,
 George Elba Hathaway,
 Fred John Hemple,
 William Josiah Higgins,
 Frank Webster Holmes,
 Jay Reuben Holton,
 John Louis Hoover,
 Homer Fall Hussey, Ph.B., *Earlham*
College,

George Renshaw Johnson,
 Beaumont Hardine Kaighn,
 George Wesley Kenson,
 Allen Huylar Kessler,
 Augusta Larson,
 Joseph Lathrop, Jr.,
 Charles Cummings Lick,
 Thomas Hale Low,
 Robert Bruce MacKenzie,
 Michael Joseph McCormick,
 Charles Aloysius McGettigan, Jr.,
 James Archibald McIndoe,
 Walter Charles McKinney,
 Anna Katharine Miller,
 Albert Francis Monroe,
 George McWilliams Moore,
 Miles Jacob Moyer,
 Allen Eugene Mulder,
 Forest Joseph Overholt,
 Barnum Hulbert Pearce,
 Benjamin Franklin Pearce,
 George Andrew Servis,
 Adelbert Westel Showerman,
 Judson Spencer Smith,
 Walter Herbert Stanley,
 Frank Lee Stow,
 Dean Nathaniel Swift,
 Charles Henry Terry,
 Charles Reed Vanderbelt,
 Ernest Percy Van Kleeck,
 Albert Wesley Weible,

Grand Rapids.
Northville.
Delano, Pa.
Worcester, Mass.
Chelsea.
Grand Rapids.
Holland.
Kalamazoo.
Newton, Kan.
Richmond, Ind.

Richmond, Ind.
Manchester.
Dayton, Ky.
Alma Centre, Wis.
Detroit.
Kansas City, Mo.
Detroit.
Marlette.
Cambridge, Mass.
Calumet.

Rockburn, Province of Quebec.
San José, Cal.
Rhineland, Wis.
Saginaw, East Side.
Ann Arbor.
Flint.
Fond du Lac, Wis.
Samaria.
Laingsburg.
Fulton.
Wellington, O.
San Francisco, Cal.
Chelsea.
Duluth, Minn.
Ypsilanti.
Leesburg, Ind.
Chicago, Ill.
Petrolia, Ont.
Pontiac, Ill.
Geneseo, N. Y.
Ann Arbor.
Jamestown, N. Y.

Charles Traver Whinery,
James Whiting,
Walter Morey Wilkins,
Wallace V. Wolvin,
Robert Millard Woodin,
George Philip Wurster,

Wilmington, O.
Essex, Ont.
Hastings.
St. Clair.
Ann Arbor.
Dexter.

FRESHMEN.

NAME.

RESIDENCE.

Douglas Anderson,
Archie Elmer Ball,
Martin Adelbert Banks,
Fred Palen Barnhart,
Orville M. Barton,
Alfred Lee Beattie,
Joseph Henry Billmeyer, Jr.,
Joseph Augustine Bucknall,
Fred Crittenden Clapp,
Lewis Emmett Coonradt,
Irving William Copeland,
Mary Bruyn Crans, B.S., *University of*
North Dakota,
Allen William Dasef,
George Leonard David,
Fred Ellsworth Dodge,
John B. Dowdigan,
Walter Gideon Dunham,
George Frederick Fiddymment,
Fred Pratt Graves,
Carl Schurz Harger,
John Henry Hawks,
Archa Greenwood Hicks,
Harry Benson Hinman,
Marshal Luther Howver,
Arthur Stimson Kennedy,
John Fredrik Henry Kuyper,
Walter Allen Lampman,
Harry Hallenbeck Lauderdale,
Frank Eugene Laughlin,
William Gustave Lentz,
Edwin Emmett McAllaster,
Stephen A. Douglas Merchant,
Joseph Merkens,

Maidstone, England.
Flushing.
Detroit.
Stone Ridge, N. Y.
Muskegon.
Pendleton, Ore.
Holloway.
London, England.
Allegan.
Decatur, Ill.
Paw Paw.
Grand Forks, N. Dak.
Sheridan.
Aledo, Ill.
San Diego, Cal.
Ann Arbor.
Hanover.
Lockport, Ill.
Battle Creek.
Pontiac.
Adrian.
Monticello, Ia.
Detroit.
Mansfield, Ill.
Cedar Rapids, Ia.
Holland.
Hastings.
Geneseo, N. Y.
Milan, O.
Ann Arbor.
Ann Arbor.
Fort Wayne, Ind.
Cologne, Germany.

Daniel Merner,	<i>Cedar Falls, Ia.</i>
Charles Stewart Millen, Jr.,	<i>Ann Arbor.</i>
John Henry Nceley,	<i>Colfax, O.</i>
George A. Parmenter,	<i>Vermontville.</i>
Clarence Fletcher Piper,	<i>Toronto, Ont.</i>
Charles Seymour Preston,	<i>Paris, Ill.</i>
Burt Townsend Ruthruff,	<i>Ann Arbor.</i>
Harold Eugene Sangster,	<i>Cadillac.</i>
Frederick Francis Scott,	<i>Ann Arbor.</i>
Newton Smith, Jr.,	<i>Toulon, Ill.</i>
Charles Bradford McCall Southwick,	<i>Mt. Pleasant.</i>
Joseph Herman Stromier,	<i>Glasgow, Scotland.</i>
William Taft,	<i>Cincinnati, O.</i>
Andrew Roane Thorpe, A.B., <i>St. Vincent's</i>	
<i>College,</i>	<i>Los Angeles, Cal.</i>
Christian Leonard Thuerer,	<i>Baraboo, Wis.</i>
Perley Tapley Van Ornum,	<i>Racine, Wis.</i>
Elisabeth von Bremen,	<i>Cologne, Germany.</i>
Frederick von Widekind,	<i>Cologne, Germany.</i>
Harry Lowell Whitney,	<i>Plainwell.</i>
William Parker Winning,	<i>Saginaw.</i>
Lawrence Oliver Wright,	<i>Grand Rapids.</i>

Additional Names.

DEPARTMENT OF LITERATURE, SCIENCE, AND THE ARTS.

RESIDENT GRADUATES.

NAME.	RESIDENCE.
Della Lease Gust, B.L., <i>Ohio Wesleyan University</i> , 1890,	<i>Fostoria, O.</i>
Phebe Anne Isadore Howell, A.B., 1889,	<i>Ann Arbor.</i>

CANDIDATES FOR A MASTER'S DEGREE, STUDYING IN ABSENTIA.

NAME.	RESIDENCE.
Eugene Gerald Fassett, B.S., 1892, Political Economy; American History; European History.	<i>Chicago, Ill.</i>

UNDERGRADUATES.

NAME.	DEGREE.	CREDIT.	RESIDENCE.
Delia Sophia Bailey,	A.B.	66	<i>Grand Rapids.</i>
Willis Sylvester McCornick, B.S. (C.E.)			<i>Salt Lake City, Utah.</i>

DEPARTMENT OF LAW.

RESIDENT GRADUATES.

NAME.	RESIDENCE.
Arthur Henry Seymour, LL.B.,	<i>Ann Arbor.</i>

SPECIAL STUDENTS.

NAME.	RESIDENCE.
Alfred Arthur Sessions,	<i>Traverse City.</i>

Summary of Students.

DEPARTMENT OF LITERATURE, SCIENCE, AND THE ARTS.

Holder of the Elisha Jones Classical Fellowship	1
Resident Graduates	65
*Candidates for an Advanced Degree, Enrolled in Other Departments	6
Graduates Studying <i>in Absentia</i>	44
Undergraduates:	
Candidates for a degree	1131
Students not Candidates for a Degree	244—1491

DEPARTMENT OF MEDICINE AND SURGERY.

Resident Graduates	3
Fourth Year Students	46
Third Year Students	76
Second Year Students	91
First Year Students	128—344

DEPARTMENT OF LAW.

Resident Graduates	24
Seniors	319
Juniors	270
Special Students	12
*Students enrolled in the Department of Literature, Science, and the Arts	14—639

SCHOOL OF PHARMACY.

Resident Graduates	2
Second Year Students	33
First Year Students	47—82

* Included in the Summary by States, on pages 270, 271, only in the Department in which they are enrolled.

HOMŒOPATHIC MEDICAL COLLEGE.

Resident Graduate	1	
Fourth Year Students	21	
Third Year Students	13	
Second Year Students	10	
First Year Students	18—	63

COLLEGE OF DENTAL SURGERY.

Resident Graduates	7	
Seniors	52	
Juniors	76	
Freshmen	54—	189
		<hr/>
		2808
Deduct for names counted more than once . . .		30
		<hr/>
Total		2778

SUMMARY BY STATES AND BY DEPARTMENTS.

	Lit. Dept.	Med. & Surg.	Law Dept.	Pharm.	Homœo.	Dent.	Total.
Michigan	903	160	180	34	31	97	*1405
Illinois	210	19	63	6	3	10	†311
Ohio	80	39	54	19	7	18	217
Indiana	47	17	40	3	1	6	†114
Iowa	30	7	27	2	1	5	†72
Pennsylvania . .	21	11	32	3	3	2	72
New York	26	18	7	2	6	8	67
Missouri	17	6	32	—	—	1	†56
Kansas	8	4	25	—	1	1	†39
Wisconsin	15	8	6	1	1	7	38
Nebraska	10	2	19	—	1	1	33
Minnesota	15	4	8	—	—	3	30
Utah	9	1	19	—	—	1	†30
California	4	2	16	—	—	5	27
Massachusetts . .	9	9	—	3	—	3	24
Colorado	9	2	11	1	—	—	23
Kentucky	4	4	12	—	—	1	21
Oregon	2	3	7	—	—	3	15
Washington	2	2	11	—	—	—	15
Tennessee	8	1	2	1	—	—	12
Maryland	3	—	5	1	—	—	9
Montana	3	—	6	—	—	—	9
Texas	1	1	5	2	—	—	9
New Hampshire . .	6	1	1	—	—	—	8
Arkansas	2	2	3	—	—	—	7
North Dakota . . .	—	1	4	—	—	2	7
Connecticut	6	—	—	—	—	—	6
South Dakota . . .	4	—	2	—	—	—	6
Vermont	—	1	4	—	1	—	6
Maine	1	1	1	2	—	—	5
District of Columbia	4	—	—	—	—	—	4
Florida	1	1	1	—	1	—	4
West Virginia . . .	—	—	3	—	1	—	4
Delaware	2	—	1	—	—	—	3
Louisiana	3	—	—	—	—	—	3
Arizona	—	—	2	—	—	—	2
Rhode Island . . .	1	—	—	—	—	1	2

* Deduct four for names counted twice.

† Deduct one for name counted twice.

Virginia	1	1	—	—	—	—	2
Idaho	—	—	1	—	—	—	1
New Jersey	1	—	—	—	—	—	1
New Mexico	1	—	—	—	—	—	1
North Carolina	—	—	—	1	—	—	1
Oklahoma	1	—	—	—	—	—	1
Wyoming	1	—	—	—	—	—	1
Ontario	6	6	7	—	5	5	29
Japan	3	—	4	1	—	—	8
England	1	—	1	—	—	3	5
Germany	1	—	—	—	—	3	4
China	1	2	—	—	—	—	3
New Brunswick	—	3	—	—	—	—	3
Hawaiian Islands	2	—	—	—	—	—	2
Italy	—	1	1	—	—	—	2
Barbadoes	—	1	—	—	—	—	1
Bermuda Islands	—	—	1	—	—	—	1
Bulgaria	—	1	—	—	—	—	1
Costa Rica	—	1	—	—	—	—	1
Manitoba	—	—	1	—	—	—	1
Porto Rico	—	1	—	—	—	—	1
Province of Quebec	—	—	—	—	—	1	1
Scotland	—	—	—	—	—	1	1
South Africa	—	—	—	—	—	1	1
Total	1485	344	625	82	63	189	*2788

* Deduct ten for names counted twice.

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 ERRATUM.

Page 200. For William Sherman Dennis, read William Sherman Denius.

ERRATUM IN CALENDAR FOR 1891-92.

Page 220. The name of Burt Dexter Walker, *Kalamazoo*, should be struck out, and the Summaries on pages 251-254 should be changed to correspond with this omission. Mr. Walker's name appears properly on page 244.

